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PRC

PRELIMINARY ASSESSMENT/ VISUAL SITE INSPECTION

AMOCO OIL COMPANY-MAIN OFFICE AND WASTEWATER TREATMENT PLANT WOOD RIVER, ILLINOIS ILD 006 272 629

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, DC 20460

Work Assignment No.	:	C05087
EPA Region	:	5
Site No.	:	ILD 006 272 629
Date Prepared	:	March 11, 1993
Contract No.	:	68-W9-0006
PRC No.	:	009-C05087IL4D
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

HRE-8J

September 15, 1992

Tim Palermo, Director
Division of Public Works
City of Wood River
501 West Ferguson
Wood River, Illinois 62095

Re: Visual Site Inspection
Formerly Amoco Oil Main Office-WWTP
ILD 006 272 629

Dear Mr. Palermo:

The United States Environmental Protection Agency (U.S. EPA) Region V will conduct a Preliminary Assessment including a Visual Site Inspection (PA/VSI) at the referenced facility. This inspection is conducted pursuant to the Resource Conservation and Recovery Act, as amended (RCRA) Section 3007 and the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA) Section 104(e). The referenced facility has generated, treated, stored, or disposed of hazardous waste subject to RCRA. The PA/VSI requires identification and systematic review of all solid waste streams at the facility. The objective of the PA/VSI is to determine whether or not releases of hazardous wastes or hazardous constituents have occurred or are occurring at the facility which may require further investigation. This analysis will also provide information to establish priorities for addressing any confirmed releases.

The visual site inspection of your facility is to verify the location of all solid waste management units (SWMUs) and areas of concern (AOCs) to make a cursory determination of their condition by visual observation. The definitions of SWMUs and AOCs are included in Attachment I. The VSI supplements and updates data gathered during a preliminary file review. During this site inspection, no samples will be taken. A sampling visit to ascertain if releases of hazardous waste or constituents have occurred may be required at a later date.

Assistance of some of your personnel may be required in reviewing solid waste flow(s) or previous disposal practices. The site inspection is to provide a technical understanding of the present and past waste flows and handling, treatment, storage, and disposal practices. Photographs of the facility are necessary to document the condition of the units at the facility and the waste management practices used.

The VSI has been scheduled for Wednesday, September 30, 1992, at 8:00 a.m. The inspection team will consist of Alan L. Supple and Catherine F. Tolley of Resource Applications, Inc., a contractor for the U.S. EPA. Representatives of the Illinois Environmental Protection Agency (IEPA) may also be present. Your cooperation in admitting and assisting them while on site is appreciated.

The U.S. EPA recommends that personnel who are familiar with the present and past manufacturing and waste management activities be available during the VSI. Access to any relevant maps, diagrams, hydrogeologic reports, environmental assessment reports, sampling data sheets, environmental permits (air, NPDES), manifests and/or correspondence is also necessary, as such information is needed to complete the PA/VSI. Attachment II is a summary of the information required.

If you have any questions, please contact me at (312) 886-4448 or Francene Harris at (312) 886-2884. A copy of the Preliminary Assessment/Visual Site Inspection Report, excluding the conclusions and Executive Summary portion will be sent when the report is available.

Sincerely yours,

Kevin M. Pierard, Chief
OH/MN Technical Enforcement Section

enclosure

cc: Larry Eastep, IEPA-Springfield
Mike Grant, IEPA-Collinsville
Gary Osborn, William M. BeDell Achievement and Resource Center
Greg Jevyak, Amoco Oil Company
Bruce Murphy, Metcalf and Eddy

ATTACHMENT I

Formerly Amoco Oil Main Office-WWTP
400 South Main Street
Wood River, Illinois 62095

The definitions of solid waste management unit (SWMU) and area of concern (AOC) are as follows.

A SWMU is defined as any discernable unit where solid wastes have been placed at any time from which hazardous constituents might migrate, regardless of whether the unit was intended for the management of a solid or hazardous waste.

The SWMU definition includes the following:

- RCRA regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that U.S. Environmental Protection Agency has generally exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents, such as wood preservative treatment dripping areas, loading or unloading areas, or solvent washing areas

An AOC is defined as any area where a release to the environment of hazardous wastes or constituents has occurred or is suspected to have occurred on a nonroutine or nonsystematic basis. This includes any area where such a release in the future is judged to be a strong possibility.

ATTACHMENT II

PROBABLE SOLID WASTE MANAGEMENT UNITS (SWMUs)

1. Little information was available to compile a list of solid waste management units (SWMUs) at your facility. Please list all waste management units at your facility. If possible, please provide as complete information for the waste unit in response to the questions below.

   From the list of probable SWMUs please address the following questions:

   - Do the above SWMUs still exist at the facility and are they in operation?
   - What are the start-up and closure dates of the above SWMUs?
   - What types of wastes are the SWMUs currently/formerly used for?
   - Name any SWMUs at your facility that have not been listed above. These would include hazardous waste storage areas, treatment units, or any other area or system at your facility dealing with hazardous waste including satellite accumulation areas.
   - What are the average volumes and rates of generation of waste streams?
   - Document any releases that have occurred at the facility. This includes spills or leaks of both wastes and raw product. Outline the action taken to clean up the release.

2. Please supply as much information as possible concerning the site history. This would include any information you have regarding past operations and any former owners/operators at this location.

3. Please provide a description of the primary processes taking place at your facility and the waste streams which are generated.

4. Describe the methods of treatment and disposal of generated waste utilized by your facility.

If available, the following items are requested:

- A detailed map of the facility showing current and former locations of SWMUs and production stations.
- Flow diagrams showing waste streams and waste management practices.
- Copies of any permits currently held by the facility.
- SARA Title III information and a copy of the facility contingency plan.

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EXECUTIVE SUMMARY

Resource Applications, Inc. (RAI), performed a preliminary assessment and visual site inspection (PA/VSI) to identify and assess the existence and likelihood of releases from solid waste management units (SWMU) and other areas of concern (AOC) at the Amoco Oil Company-Main Office and Wastewater Treatment Plant (Amoco) facility in Wood River, Illinois. This summary highlights the results of the PA/VSI and the potential for releases of hazardous wastes or hazardous constituents from SWMUs and AOCs identified. In addition, a completed U.S. Environmental Protection Agency (EPA) Preliminary Assessment Form (EPA Form 2070-12) is included in Attachment A to assist in prioritizing RCRA facilities for corrective action.

The Amoco facility is currently owned by three separate entities: the City of Wood River (Wood River), Amoco Oil Company, and the Madison County William M. BeDell Achievement and Resource Center (ARC). From 1908 to 1981, Amoco Oil Company conducted refining operations in Wood River. For the purposes of obtaining EPA ID numbers in 1980, three separate properties were identified: the Refinery (ILD 980 700 967), located to the east of the subject facility; the Main Office and Wastewater Treatment Plant, the subject of this report (ILD 006 272 629); and the Riverfront property (ILD 980 503 106), located to the west of the subject facility. Activities and operations on the Refinery and Riverfront properties are not addressed in any detail in this report. For the purposes of this report, "Amoco facility" will be used when referring to the Main Office and Wastewater Treatment Plant property. A wastewater treatment plant (WWTP) was built on the Amoco facility property and began operations in August 1977. In June 1981, Amoco Oil Company's refining operations ceased in Wood River, and ownership of the Refinery property was taken over by Amoco Chemicals Corporation (ACC). Currently, a petroleum terminal is still operated by Amoco Oil Company on the Refinery property; the remainder of the original Refinery property, now owned by ACC, is operated by Amoco Petroleum Additives Company (APAC). The WWTP continued to operate after 1981, and was used until 1985 for treatment of wastes from APAC operations. In 1984, the WWTP underwent RCRA closure and the portion of the facility property housing the WWTP was donated to Wood River, per an Agreement of Assignment between Amoco Oil Company and Wood River, signed in July 1982. Wood River merged the WWTP with its municipal sanitary system, and currently treats both APAC and municipal wastewater. The transition between Amoco Oil Company and Wood River operation of the WWTP took place during 1985. The Wood River plant is not

RCRA regulated, and generates only nonhazardous wastes. It is operated by Metcalf and Eddy Services, Inc., on behalf of Wood River.

The Wood River WWTP occupies roughly the southernmost third of the Amoco facility property. This plant treats all municipal wastewater from Wood River and several surrounding communities and is the only current source of waste generation at the facility. Industrial wastewater and stormwater runoff from APAC is also treated at the plant. In addition, the plant treats ground water contaminated with petroleum products, which is recovered from the Riverfront and Refinery properties using a system located on the Refinery property. The plant generates and manages the following waste streams: clariflotation sludge and aerobic digestion sludge. In addition, the plant manages wastewater and ground water contaminated with petroleum products. All these waste streams are nonhazardous (special) wastes. Prior to 1984, dissolved air flotation (DAF) float (K048) was generated from the clariflotation tank.

Since 1952, the central portion of the Amoco facility (immediately north of the WWTP) has been owned by Amoco Oil Company and used for storage of its commercial products. No information was available from facility representatives or the file review regarding operations on the Amoco facility property prior to 1952. Three aboveground storage tanks (AST) designated as Tanks 287, 288, and 289 were used to store leaded gasoline from 1952 until 1981. Tank bottoms (D008) were generated in the past from cleanout of these tanks. These bottoms were buried in the Tank Bottom Disposal Areas (SWMU 2) during the period 1952 to 1981, and are still present. In 1990, Tank 287 was converted to serve as the equalization tank for the WWTP. Tanks 288 and 289 have been used for unleaded gasoline storage since 1981.

The remainder of the property, that is, roughly the northernmost third, contains a three-story building which formerly housed the Amoco Oil Company main office for the refining operations. The building and surrounding property were donated to Madison County for establishment of ARC in 1981. No hazardous waste activity took place in the office building or on this portion of the property.

SWMU 1, the Wastewater Treatment Unit, part of the WWTP, was not exempt from RCRA regulation. This was because the lagoons, holding basins, and lift stations that were part of the

system were classified as surface impoundments. Therefore, the unit did not meet the definition of a "tank system" per 40 CFR 260.10. In 1984, SWMU 1 underwent RCRA closure, which was approved by IEPA on March 20, 1985. The facility is currently not RCRA regulated, generating only nonhazardous wastes.

On May 15, 1981, Amoco Oil Company filed an EPA Notification of Hazardous Waste Site form required under Section 103(c) of CERCLA. This form specified the Tank Bottom Disposal Areas (SWMU 2), in which leaded tank bottoms (D008) from Tanks 287 through 289 were buried prior to 1981. On March 4, 1985, Illinois Environmental Protection Agency (IEPA) completed EPA Form 2070-12, indicating that the areas used for disposal should be investigated. On March 4, 1986, Ecology and Environment, Inc. (E&E) conducted a Field Investigation Team Site Inspection at the facility. This study did not involve sampling, but it was concluded the "the potential exists for the surrounding population to be adversely affected by contamination of the ground water supply." At the time of the inspection, a decision was made by EPA not to score the site using the Hazard Ranking System. No further information was available on this area.

The PA/VSI identified the following two SWMUs at the facility:

Solid Waste Management Units

1. Wastewater Treatment Unit
2. Tank Bottom Disposal Areas

No Areas of Concern were identified at the facility.

The potential for release to ground water is low from SWMU 1, the Wastewater Treatment Unit, does not currently manage hazardous wastes. The potential for release to ground water is moderate for SWMU 2, as ground water is encountered at depths of about 35 feet, and lead contaminant could migrate to ground water.

A release to surface water occurred from the Wastewater Treatment Unit (SWMU 1) in 1985, when oil was discharged to the Mississippi River via the facility's National Pollutant Discharge Elimination System (NPDES) outfall. The spill was remediated by the facility and the U.S. Coast Guard. In addition, a number of NPDES permit violations were recorded over a period of several

years. These discharge problems were resolved with the installation of additional pretreatment equipment at the APAC facility, in order to improve incoming wastewater quality. The potential for release to surface water from SWMU 2 is low, as runoff from the area drains back into SWMU 1.

The potential for release to air is low from both SWMUs, as volatile wastes are not managed.

Several releases to soil occurred from SWMU 1 during 1984 as a result of overflows from the aerobic digester and the mudwell (now the chlorination basin). No hazardous constituents were involved and no soil was excavated. A release to soil has occurred at SWMU 2. Soil sampling conducted in 1984 by Amoco Oil Company showed levels of up to 2,660 parts per million of lead in the area. No remedial activities have taken place as yet, and, based on file reviews and interviews with facility representatives, no such activities are planned.

The Amoco facility occupies approximately 18 acres in a mixed-use industrial, residential, and commercial area in Wood River, Illinois. The Wood River WWTP currently employs 10 people. Wood River has a population of 11,490. The facility is bordered on the north by Evans Avenue and a residential area, on the west by State Aid Road (State Route 3) and the Amoco Oil Company Riverfront Property, on the south by the sanitary sewage treatment equipment associated with the Wood River WWTP, and on the east by Conrail railroad tracks and the former Amoco Oil Company Refinery property. The nearest residences are 50 to 100 feet from the property line at the northwest and southwest corners of the facility. The nearest school, Lincoln School, is located about 0.7 mile north of the facility. The facility is entirely enclosed by a fence, and the gates are locked after business hours.

The nearest surface water body, the Mississippi River, is located 0.4 mile west-southwest of the facility and is used for recreational and industrial purposes. Other surface water bodies in the area include the Cahokia Diversion Channel, approximately 3 miles south of the facility, and the East Fork of Wood River, 2.5 miles to the north.

Ground water is used as a municipal water supply. The nearest drinking water wells are located 2.4 miles north-northwest of the facility. These five municipal wells are completed in glacial

deposits at depths of between 80 and 100 feet. These wells are located upgradient of the facility. The location of the nearest industrial water well is not known.

Sensitive environments are not located on site. However, wetland areas are located immediately west of the facility, between State Route 3 and the Mississippi River. These areas extend northwest and south of the facility, along a strip of land adjacent to both the Mississippi and Wood Rivers. Wetland types include the following: palustrine, unconsolidated bottom, intermittently exposed, excavated; palustrine, forested, broad-leaved deciduous, temporarily flooded, excavated; palustrine emergent, seasonally or temporarily flooded, excavated; and lacustrine, limnetic, unconsolidated bottom, artificially or permanently flooded, excavated or diked. Some wetland areas may be as large as 30 to 40 acres.

Because the Tank Bottom Disposal Areas (SWMU 2) have been used as a land-based disposal unit for hazardous wastes, RAI recommends that the unit undergo RCRA closure, including soil sampling for lead. No further action is recommended for the Wastewater Treatment Unit (SWMU 1).

1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC), received Work Assignment No. C05087 from the U.S. Environmental Protection Agency (EPA) under Contract No. 68-W9-0006 (TES 9) to conduct preliminary assessments (PA) and visual site inspections (VSI) of hazardous waste treatment and storage facilities in Region 5. Resource Applications, Inc. (RAI), TES 9 team member, provided the necessary assistance to complete the PA/VSI activities for the Amoco Oil Company-Main Office and Wastewater Treatment Plant (Amoco) facility.

As part of the EPA Region 5 Environmental Priorities Initiative, the RCRA and CERCLA programs are working together to identify and address RCRA facilities that have a high priority for corrective action using applicable RCRA and CERCLA authorities. The PA/VSI is the first step in the process of prioritizing facilities for corrective action. Through the PA/VSI process, enough information is obtained to characterize a facility's actual or potential releases to the environment from solid waste management units (SWMU) and areas of concern (AOC).

A SWMU is defined as any discernible unit at a RCRA facility in which solid wastes have been placed and from which hazardous constituents might migrate, regardless of whether the unit was intended to manage solid or hazardous waste.

The SWMU definition includes the following:

- RCRA-regulated units, such as container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, and underground injection wells
- Closed and abandoned units
- Recycling units, wastewater treatment units, and other units that EPA has usually exempted from standards applicable to hazardous waste management units
- Areas contaminated by routine and systematic releases of wastes or hazardous constituents. Such areas might include a wood preservative drippage area, a loading or unloading area, or an area where solvent used to wash large parts has continually dripped onto soils.

An AOC is defined as any area where a release of hazardous waste or constituents to the environment has occurred or is suspected to have occurred on a nonroutine and nonsystematic basis. This includes any area where a strong possibility exists that such a release might occur in the future.

The purpose of the PA is as follows:

- Identify SWMUs and AOCs at the facility
- Obtain information on the operational history of the facility
- Obtain information on releases from any units at the facility
- Identify data gaps and other informational needs to be filled during the VSI

The PA generally includes review of all relevant documents and files located at state offices and at the EPA Region 5 office in Chicago.

The purpose of the VSI is as follows:

- Identify SWMUs and AOCs not discovered during the PA
- Identify releases not discovered during the PA
- Provide a specific description of the environmental setting
- Provide information on release pathways and the potential for releases to each medium
- Confirm information obtained during the PA regarding operations, SWMUs, AOCs, and releases

The VSI includes interviewing appropriate facility staff; inspecting the entire facility to identify all SWMUs and AOCs; photographing all visible SWMUs; identifying evidence of releases; making a preliminary selection of potential sampling parameters and locations, if needed; and obtaining additional information necessary to complete the PA/VSI report.

This report documents the results of a PA/VSI of the Amoco facility (EPA Identification No. ILD 006 272 629) in Wood River, Illinois. The PA was completed on September 29, 1992. RAI gathered and reviewed information from the Illinois Environmental Protection Agency (IEPA) and from EPA Region 5 RCRA files. RAI obtained additional information pertinent to the site from the Illinois State Geological Survey (ISGS), U.S. Geological Survey (USGS), U.S. Department of Agriculture (USDA), U.S. Department of the Interior (USDI), the U.S. Department of Commerce (USDC), and the Federal Emergency Management Agency (FEMA). The VSI was conducted on September 30, 1992. It included interviews with facility representatives and a walk-through inspection of the facility. RAI identified two SWMUs and no AOCs at the facility.

RAI completed EPA Form 2070-12 using information gathered during the PA/VSI. This form is included as Attachment A. The VSI is summarized and 14 inspection photographs are included in Attachment B. Field notes from the VSI are included in Attachment C. Copies of the facility's Notification of Hazardous Waste Activity and RCRA Part A permit applications are included in Attachment D.

2.0 FACILITY DESCRIPTION

This section describes the facility's location; past and present operations; waste generating processes and waste management practices; a history of documented releases; regulatory history; environmental setting; and receptors.

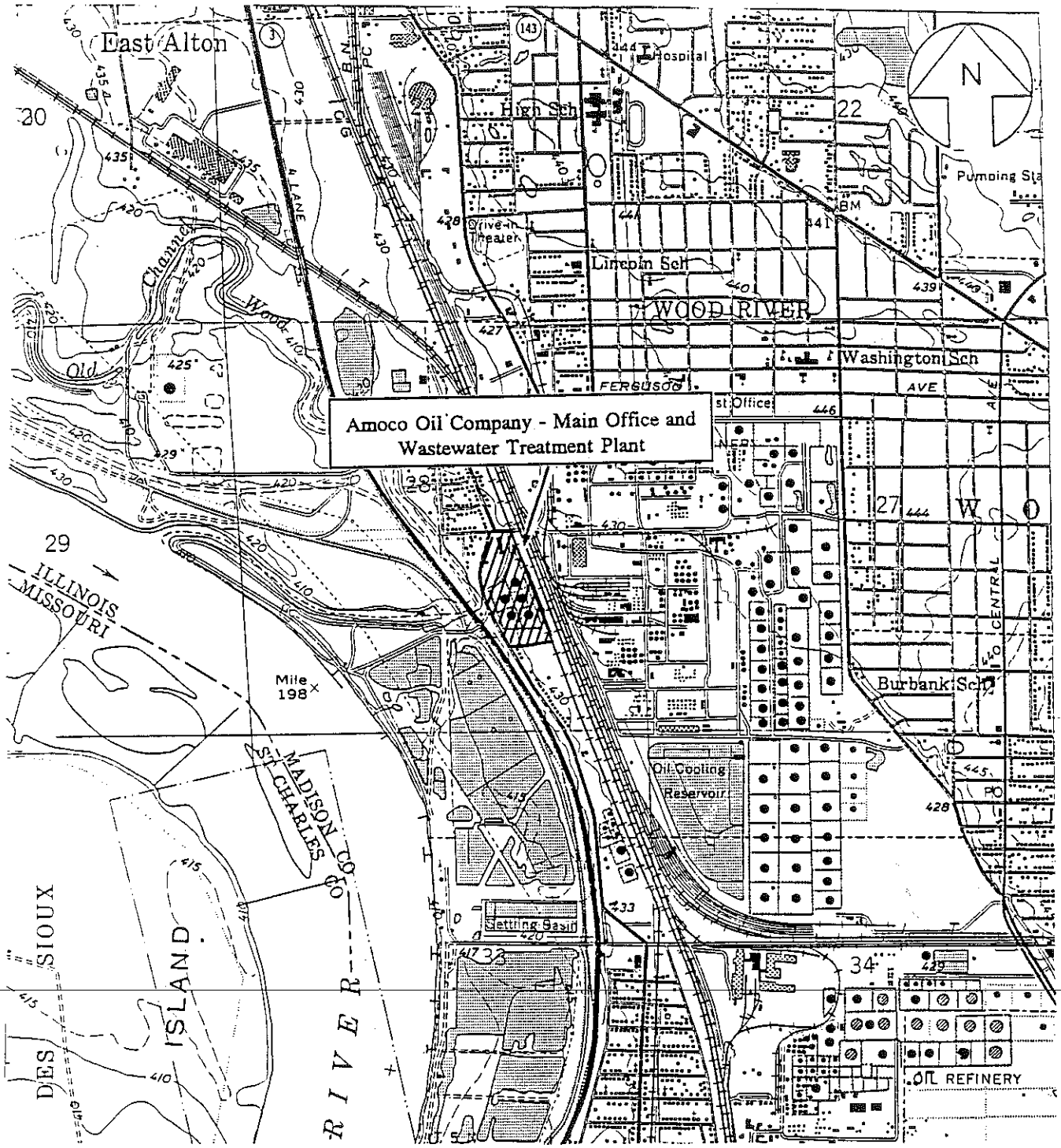
2.1 FACILITY LOCATION

The Amoco facility is located at 400 South Main Street in Wood River, Illinois. Figure 1 shows the location of the facility in relation to the surrounding topographic features (latitude 38°51'13" N and longitude 90°06'06" W). The facility occupies approximately 18 acres in a mixed-use industrial, residential, and commercial area.

The Amoco facility is bordered on the north by Evans Avenue and a residential area, on the west by State Aid Road (State Route 3) and the Amoco Oil Company Riverfront (Riverfront) property, on the south by the sanitary sewage treatment equipment associated with the City of Wood River (Wood River) Wastewater Treatment Plant (WWTP), and on the east by Conrail railroad tracks and the former Amoco Oil Company Refinery (Refinery) property. The Riverfront and Refinery properties are discussed in Section 2.2.

2.2 FACILITY OPERATIONS

The Amoco facility is currently owned by three separate entities: Wood River, Amoco Oil Company, and the Madison County William M. BeDell Achievement and Resource Center (ARC). From 1908 to 1981, Amoco Oil Company conducted refining operations in Wood River. For the purposes of obtaining EPA ID numbers in 1980, three separate properties were identified: the Refinery (ILD 980 700 967), located to the east of the subject facility; the Main Office and Wastewater Treatment Plant, the subject of this report (ILD 006 272 629); and the Riverfront property (ILD 980 503 106), located to the west of the subject facility. Activities and operations on the Refinery and Riverfront properties are not addressed in any detail in this report. For the purposes of this report, "Amoco facility" will be used when referring to the Main Office and Wastewater



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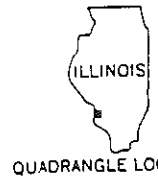
Scale: 1" = 2,000'



QUADRANGLE LOCATION

Amoco Oil Company - Main Office and Wastewater Treatment Plant Wood River, Illinois
Figure 1 FACILITY LOCATION
Resource Applications, Inc.

Treatment Plant property. Prior to 1977, wastewater treatment facilities for the Refinery were located on the Riverfront Property. As a result of the introduction of more stringent National Pollutant Discharge Elimination System (NPDES) effluent discharge limits, it was necessary to construct a new WWTP to meet the revised limits. This plant was built on the Amoco facility property and began operations in August 1977. In June 1981, Amoco Oil Company's refining operations ceased in Wood River, and ownership of the Refinery property was taken over by Amoco Chemicals Corporation (ACC). Currently, a petroleum terminal is still operated by Amoco Oil Company on the Refinery property; the remainder of the Refinery property is operated by Amoco Petroleum Additives Company (APAC). The WWTP continued to operate after 1981, and was used until 1985 for treatment of wastes from APAC operations. In 1984, the WWTP underwent RCRA closure (see Section 2.5) and the portion of the facility property housing the WWTP was donated to Wood River, per an Agreement of Assignment between Amoco Oil Company and Wood River, signed in July 1982. Wood River merged the WWTP with its municipal sanitary system, and currently treats both APAC and municipal wastewater. The transition between Amoco Oil Company and Wood River operation of the WWTP took place during 1985. From the information available to RAI, it appears that the WWTP did not shut down for any appreciable period of time during the change in ownership. The Wood River plant is not RCRA regulated, and generates only nonhazardous wastes. It is operated by Metcalf and Eddy Services, Inc., on behalf of Wood River.

Wood River owns the municipal and industrial WWTP on roughly the southernmost third of the Amoco facility property. This plant treats all municipal wastewater from Wood River and several surrounding communities. Industrial wastewater and stormwater runoff from APAC is also treated at the plant. In addition, the WWTP treats ground water contaminated with petroleum products which is recovered using a system located on the Refinery property. The ground water contamination and associated recovery system are not addressed in any detail in this report, as they are associated with the Refinery property, which is separate from the subject facility. There are two parallel wastewater treatment operations: one for the municipal (sanitary) wastewater and one for industrial wastewater. The sanitary wastewater is initially treated in a system located immediately south of the Amoco facility property line. This system is operated by Wood River as part of the WWTP, but not addressed in this report, as it is located off site and manages only sanitary waste. The pretreated water is then pumped onto the facility property for the final stages of treatment prior to discharge. Thus, the majority of this discussion of operations pertains to treatment of industrial wastewater,

contaminated ground water, and stormwater runoff from APAC (the Refinery property) and from the Riverfront property.

Runoff and industrial wastewater is received from the Refinery property by a concrete lift station. The water is then pumped into a clariflotation tank, in which settling of solids occurs. In addition, a cationic polymer is used to aid flocculation. Prior to 1984, a dissolved air flotation (DAF) system was also used; this system is explained in Section 2.3. Currently, clariflotation sludge from the tank is pumped to one of two belt filter presses, where the material is dewatered and accumulated in a roll-off box. From the clariflotation tank, the effluent is pumped to an equalization tank; en route, the wastewater is neutralized using sulfuric acid. The equalization tank serves to control any high organic or pH loadings by sufficiently diluting the wastewater. Prior to 1990, no equalization tank was used; the tank was incorporated to avoid overloading the system. The effluent from the equalization tank is fed into a pump station, where it is mixed with sanitary wastewater that has been treated off site (as previously mentioned in this section). In addition, ground water contaminated with petroleum products recovered from the Riverfront and Refinery properties is fed into the system at this stage. The mixture is pumped to an aeration tank where organic matter is broken down using aerobic digestion. The wastewater then undergoes secondary clarification in a separate tank, and activated sludge settles out. Occasionally, a flocculant is used if high organic loads are encountered. The activated sludge is pumped out of the secondary clarifier and returned to the aeration tank; at this point, between 1 and 2 tons of sludge are removed every day in order to maintain the effectiveness of the digestion system. This removed sludge is pumped into the aerobic digester, where organic matter is further decomposed over a period of approximately 40 days. After this, the aerobic digestion sludge is pumped into a lagoon located off site to the south of the property, operated by Wood River as part of the WWTP. The effluent is pumped from the secondary clarifier to a cement chlorination basin. Occasionally, a post filter (sand filter) may be used prior to chlorination. After chlorination, the treated wastewater flows to the facility's NPDES outfall, and subsequently into the Mississippi River.

Solid wastes generated from facility operations and the SWMUs where they are managed are discussed in detail in Section 2.3.

Since 1952, the central portion of the Amoco facility (immediately north of the WWTP) has been owned by Amoco Oil Company and used for storage of its commercial products. Three aboveground storage tanks (AST) designated 287, 288, and 289 were used to store leaded gasoline from 1952 until 1981. In 1990, Tank 287 was converted to serve as the equalization tank for the WWTP. Tanks 288 and 289 have been used for unleaded gasoline storage since 1981. Two additional ASTs located to the west of Tanks 287 through 289 are used for storage of other Amoco Oil Company products, such as light oils. The portion of the Amoco facility used for bulk storage is owned by Amoco Oil Company.

The remainder of the property, that is, roughly the northernmost third, contains a three-story building which formerly housed the Amoco Oil Company main office for the Refinery operations. The building and surrounding property were donated to Madison County for establishment of ARC in 1981. No hazardous waste activity took place in the office building or on this portion of the property.

In the past, the Amoco WWTP operations employed three people. Currently, the Wood River WWTP employs 10 people working full-time in three shifts; the plant is manned 24 hours a day, 7 days a week. The wastewater treatment tanks are all located outdoors; the belt filter presses and Tank T-1001 are located inside a building. The remainder of the Amoco facility property is occupied by the AST farm, the building currently owned by ARC, and an associated parking lot. The facility occupies a total of approximately 18 acres.

2.3 WASTE GENERATION AND MANAGEMENT

Wastes are generated and managed at various locations throughout the facility. The facility's SWMUs are identified in Table 1. The facility layout, including SWMU locations, is shown in Figure 2. The facility's waste streams are summarized in Table 2.

The Amoco facility treats nonhazardous wastewater from industrial activities at APAC and from the surrounding municipalities. In addition, the facility treats nonhazardous ground water contaminated with petroleum products recovered off site from the Riverfront and Refinery properties.

TABLE 1

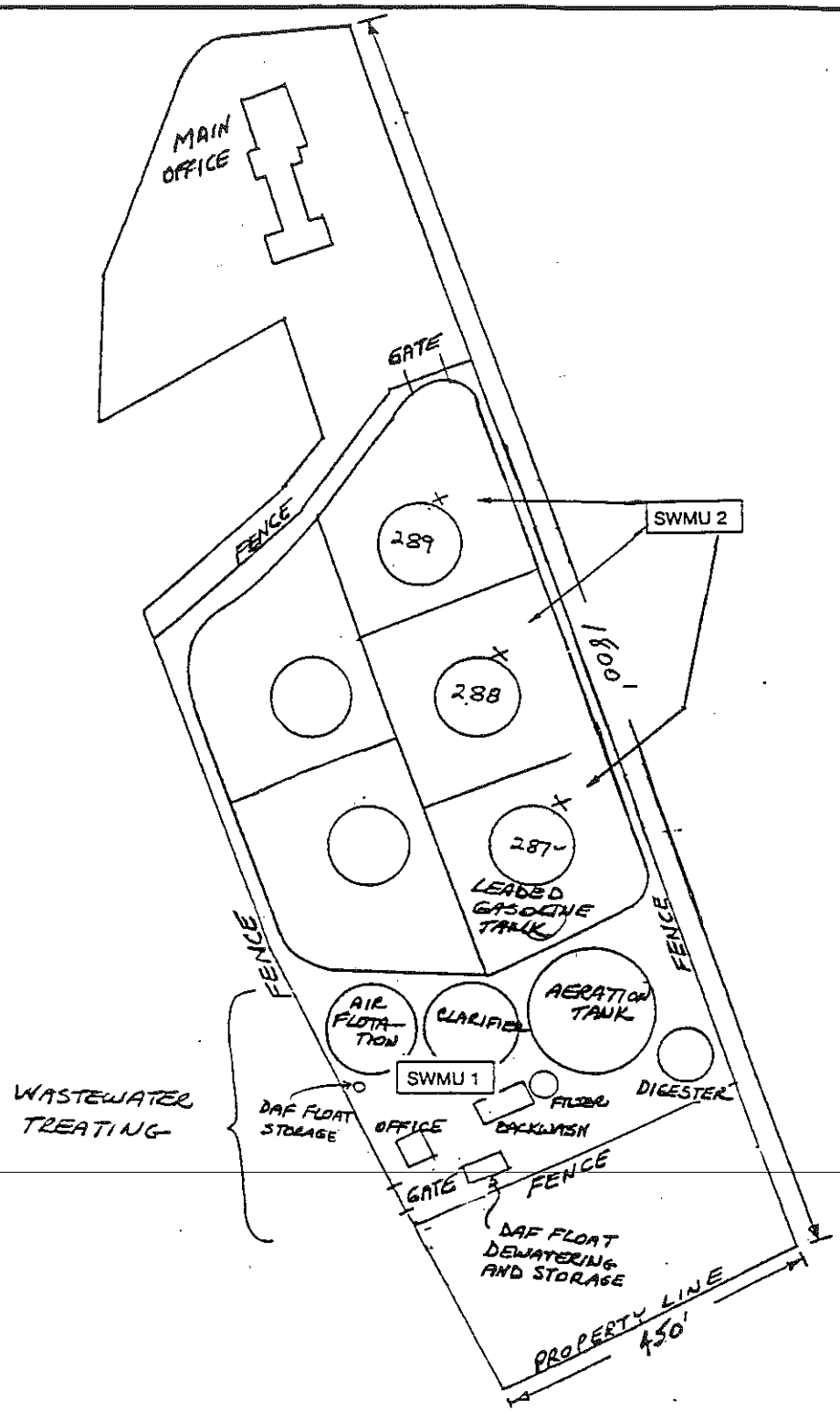
SOLID WASTE MANAGEMENT UNITS

SWMU Number	SWMU Name	RCRA Hazardous Waste Management Unit[a]	Status
1	Wastewater Treatment Unit	Yes[b]	Active, RCRA closure approved in 1985; currently not RCRA regulated.
2	Tank Bottom Disposal Areas	Yes	Active, although no wastes have been disposed of since at least 1981.

Note:

[a] A RCRA hazardous waste management unit is one that currently requires or formerly required submittal of a RCRA Part A or Part B permit application.

[b] This unit does not fall under the RCRA exemption for wastewater treatment units, as it does not meet the definition of a "tank system" in 40 CFR Part 260.1. This is because the system includes several surface impoundments, and such in-ground basins do not fall under the "tank" definition.



Solid Waste Management Units (SWMU)

1. Wastewater Treatment Unit
2. Tank Bottom Disposal Areas

Source: Modified from Amoco, 1980b

Scale: 1 inch = 240 feet

Amoco Oil Company - Main Office and Wastewater Treatment Plant
Wood River, Illinois

Figure 2
FACILITY LAYOUT

Resource Applications, Inc.

TABLE 2

SOLID WASTES

Waste/EPA Waste Code[a]	Source	Solid Waste Management Unit
Wastewater/NA[b]	APAC and municipalities	1
Ground water contaminated with petroleum products/NA[b]	Remediation activities off site on Riverfront and Refinery properties	1
DAF float/K048/NA[c,d]	Clariflotation tank	1
Clariflotation sludge/NA-special waste	Clariflotation tank	1
Aerobic digestion sludge/NA-special waste	Aeration tank	1
Tank bottoms/D008[c]	Leaded gasoline tank cleanout	2

Notes:

[a] Not applicable (NA) designates nonhazardous waste.

[b] This waste stream is generated off site.

[c] This waste stream is no longer generated.

[d] After refining operations ceased in 1981, this waste stream was reclassified as nonhazardous.

The equipment and tanks discussed in this section are considered part of SWMU 1, the Wastewater Treatment Unit.

Prior to 1984, when Amoco Oil Company owned the WWTP, the clariflotation tank utilized a dissolved air flotation (DAF) system, which involved the injection of compressed air into the wastewater. Solids within the wastewater became attached to the air bubbles, which rose to the surface. The resulting waste stream, DAF float, was then skimmed into, and accumulated in, Tank T-202. When the tank was filled, the DAF float was pumped either to lagoons located on the Riverfront property (and thus not part of SWMU 1) or, between 1981 and 1984, to Tank T-1001, the feed tank for the belt filter presses. Prior to July 1981, when refining operations were still taking place, the DAF float was a listed hazardous waste (K048), due to high levels of hexavalent chromium and lead. The bulk of the DAF float was pumped off site to the lagoons on the Riverfront property, as its high oil content did not allow dewatering; the remainder was pumped to Tank T-1001 and subsequently dewatered.

After refining operations ceased in July 1981, the wastewaters from APAC operations did not contain as much oil, and thus the DAF float was able to be dewatered. In addition, as the waste stream was no longer being generated from petroleum refining operations, it was no longer a listed hazardous waste, did not exhibit any of the RCRA-prescribed hazardous waste characteristics, and was not toxic under the Extraction Procedure (EP). Thus, the DAF float was a nonhazardous waste stream from July 1981 until ownership of the WWTP was transferred in 1984. Since operations were taken over by Wood River, DAF has not been used; the clariflotation tank is used solely for settling and chemical flocculation. In the past, nonhazardous DAF float was generated at the rate of 10 cubic yards per week; a rate of generation was not available for hazardous DAF float (K048). Nonhazardous DAF float was transported to Litchfield-Hillsboro Landfill in Litchfield, Illinois. The names of the transporter for the nonhazardous DAF float, and the transporter and disposal facility for the portion of the hazardous DAF float that was dewatered, were not available from interviews with facility representatives or in files reviewed by RAI.

Clariflotation sludge (nonhazardous special waste), generated since 1984, settles to the bottom of the clariflotation tank and is pumped to Tank T-1001 adjacent to the belt filter presses. The sludge is then pumped through a sludge feedline, where a polymer solution is injected to aid the dewatering

process, and into the belt filter press. Dewatered sludge is collected in a 12-cubic-yard steel roll-off box lined with polyethylene. When the box is full, it is transported by Mid-West Sanitary Services, Inc. of Wood River, Illinois under an IEPA special waste permit to the Litchfield-Hillsboro Landfill in Litchfield, Illinois. Between 120 and 170 cubic yards of clariflotation sludge are generated every week.

Aerobic digestion sludge from the aeration tank is pumped to the aerobic digester tank for further organic digestion. In this tank, solids settle out, and decanted water is pumped back to the aeration tank. The dewatered nonhazardous aerobic digestion sludge (special waste) flows off site under gravity to a lagoon located south of the facility property line, on land owned by Wood River. As this lagoon is off site, it is not addressed as part of the Wastewater Treatment Unit (SWMU 1). This aerobic digestion sludge is eventually pumped into a Wood River tanker truck and used by a local farmer for land application. An IEPA permit is held for this disposal process. Between 1,800 and 2,000 dry tons of aerobic digestion sludge are generated annually.

Between 1952 and 1981, tank bottoms (D008) containing lead were disposed of by burial within the containment areas for Tanks 288 and 289; in addition, according to information in files reviewed by RAI, disposal may also have taken place in the vicinity of Tank 287. The tank bottoms were generated from cleanout of the tanks, which managed commercial product leaded gasoline. The exact management practices are not known, but based on the proximity of the disposal areas to the tanks, it appears that the waste was buried directly after cleanout of the tanks. A CERCLA 103(c) Notification of Hazardous Waste Site form was submitted to EPA on May 15, 1981, informing EPA of the disposal of these tank bottoms. In this report the areas are addressed as the Tank Bottom Disposal Areas (SWMU 2). In 1984, Amoco Oil Company sampled soils surrounding the tanks, and found up to 2,660 parts per million (ppm) of lead, according to a Field Investigation Team (FIT) report prepared by Ecology and Environment, Inc. (E&E) on behalf of EPA in 1986 (E&E, 1986). According to the report, the volume of tank bottoms was unknown, but is thought to have been small, due to the "finished" nature of the gasoline stored and thus the minimal generation of sludge.

2.4 HISTORY OF DOCUMENTED RELEASES

This section discusses the history of documented releases to ground water, surface water, air, and on-site soils at the facility.

From 1952 to 1981, Amoco Oil Company buried tank bottoms (D008) containing lead in the Tank Bottom Disposal Areas (SWMU 2). Soil sampling in 1984 indicated lead levels of up to 2,660 ppm. Each time wastes were buried, a release to soil occurred. More information on this area is presented in Sections 2.3 and 2.5.

On or before August 8, 1984, the mudwell, which held backwash water from the sand filters, overflowed due to a valve malfunction on the filters. The water filled an excavation that was present due to construction taking place prior to the takeover by Wood River. The mudwell overflowed two additional times over the following month, filling other excavations and causing some damage to newly poured concrete structures. Water was pumped out and fed back into the WWTP main pump station for reintroduction into the treatment system. The faulty valve was replaced and no further problems were encountered (IEPA, 1984c). The mudwell is now used as the chlorination basin. On November 20, 1984, the aerobic digester overflowed, filling the excavation for the main process lift station. Water was released from the aerobic digester, but RAI was unable to determine from the documentation whether aerobic digestion sludge was also released. The water was pumped to the storm sewer for reintroduction into the WWTP main pump station. On November 27, 1984, the post filter tank overflowed, filling the main process pump station. The post filter water was pumped back to the sewer system, in the same manner as described above for the aerobic digester overflow. The post filter tank overflow was due to leakage through a metal pan separating the filtration compartment from the upper compartment, which held filtered water prior to discharge (IEPA, 1984d).

As a result of the above releases, a Compliance Inquiry Letter (CIL) was issued to Amoco Oil Company on December 14, 1984, requesting an explanation for the overflows and an outline of the steps being taken to avoid future incidents (IEPA, 1984e). APAC responded on December 31, 1984 indicating that equipment had been replaced and inspections had been scheduled more frequently in order to prevent the reoccurrence of the overflow problems (APAC, 1984). There was no correspondence in the files reviewed by RAI indicating that the requirements of the CIL were met.

On January 8, 1985, an IEPA Division of Water Pollution Control (DWPC) inspection revealed that the aerobic digester had overflowed again. An IEPA interview with a facility representative indicated that the overflow had occurred on December 31, 1984 due to an operator error (IEPA, 1985a). No additional action appears to have been taken. Based on RAI's file review, no soil sampling appears to have been performed for any of the above incidents. Facility representatives indicated that the constituents involved were of a nonhazardous nature.

On January 28, 1985, IEPA received a call from the U.S. Coast Guard indicating that 300 to 400 gallons of oil were floating on the Mississippi River approximately 100 yards south of the Amoco facility NPDES outfall. On January 29, 1985, ACC personnel telephoned IEPA to report that a slug of oil was received by the WWTP over the previous weekend. At the time, the plant was unmanned; thus, the bulk of the oil passed through the plant, and approximately 100 gallons were discharged to the Mississippi River. The oil was cleaned up with the assistance of the U.S. Coast Guard (IEPA, 1985a). Information on the cleanup methods used was not available.

In addition to the above incidents, the facility has a history of violations of its NPDES permit for discharge from the WWTP outfall. These systematic violations are described in more detail in Section 2.5, and were resolved in 1990 and 1991 with the installation of improved pretreatment equipment at the APAC facility on the Refinery property.

2.5 REGULATORY HISTORY

Amoco Oil Company submitted a Notification of Hazardous Waste Activity form to EPA on July 25, 1980, notifying as a generator and treatment, storage, or disposal (TSD) facility (Amoco, 1980a). Amoco Oil Company submitted a RCRA Part A permit application on November 18, 1980 (Amoco, 1980b). The Notification form listed various F-, K-, P-, and U-waste codes, as well as D000 (toxic), D001, and D002. It is not known to which waste streams these waste codes pertained; the Part A permit application listed only one waste code; K048, pertaining to the DAF float waste stream. Three process codes were listed on the Part A permit application: 53,000 gallons of S02 (tank storage), pertaining to Tanks T-202 and T-1001 (discussed in Section 2.3 and 3.0); 6,000 gallons of S01 (container storage), referring to the storage of dewatered DAF float in roll-off boxes; and 2,400 gallons per day of T04 (treatment), referring to the belt filter process operations for

dewatering. All of these process codes are part of the Wastewater Treatment Unit (SWMU 1), which was not exempt from RCRA regulation. This was because the lagoons, holding basins, and lift stations that were part of the system were classified as surface impoundments. Therefore, the unit did not meet the definition of a "tank system" per 40 CFR Part 260.10. A revised Part A permit application was filed on September 5, 1984 to reflect the cessation of refining activities, and listing APAC as the operator. Based on the VSI and file reviews, it does not appear that APAC acted as the operator. No changes were made to either waste or process codes in the revised application (Amoco, 1984b). Copies of the Notification form and the Part A permit applications are included in Attachment D.

On February 28, 1984, Amoco Oil Company submitted a RCRA closure plan to IEPA for the facility, indicating that the WWTP no longer handled hazardous wastes and that ownership of the plant was scheduled to be turned over to Wood River (Amoco, 1984a). On March 23, 1984, IEPA responded, requiring the closure plan to address all areas used for hazardous waste management (IEPA, 1984a). These areas were specified as the following: Tanks T-202 and T-1001, the belt filter presses, and the roll-off boxes and surrounding areas. Additional information was submitted, and the closure plan was approved on June 15, 1984 (IEPA, 1984b). IEPA conducted a closure verification inspection on March 6, 1985, and closure was approved on March 20, 1985 (IEPA, 1985c; 1985d). The facility is currently not RCRA regulated. No hazardous waste activity is taking place at the facility; all wastes generated by the WWTP are special wastes. Based on RAI's file review, there is no indication that the Tank Bottom Disposal Areas (SWMU 2) are being or have been addressed as RCRA hazardous waste management units. Further discussion with reference to CERCLA is presented later in this section.

Several compliance inspections took place at the facility between 1981 and 1985. The only violations observed were paperwork violations pertaining to the lack of weekly inspection records and the lack of a closure plan. These violations resulted in a letter from IEPA on December 5, 1983 outlining the violations (IEPA, 1983). APAC responded on behalf of the facility on December 21, 1983 (APAC, 1983), but there is no correspondence in files reviewed by RAI indicating that the violations were considered resolved. However, as the facility has undergone RCRA closure, it is assumed by RAI that all violations were considered resolved at the time of closure.

Amoco Oil Company holds an air permit for emissions from the commercial product storage tanks at the facility (Tanks 288 and 289) and for the equalization tank (Tank 287), which was formerly a commercial product storage tank. No violations of the air permits have been documented, and the facility has no history of odor complaints from area residents. According to facility representatives, Wood River is not required to maintain air permits for the WWTP, nor did Amoco Oil Company hold such permits when it operated the facility.

Prior to the takeover by Wood River, discharges from the WWTP to the Mississippi River were regulated under an NPDES permit (IL0000035). During the period 1980 to 1985, a number of excursions above the permitted limits were observed for the following parameters: total suspended solids (TSS), ammonia (as nitrogen), zinc, lead, biochemical oxygen demand (BOD_5), fecal coliform, chemical oxygen demand (COD), and sulfide. The problems with effluent discharges were due to equipment failure and, in some cases, poor freeze protection for the equipment during the winter. In addition, a release of oil to the Mississippi River occurred on January 27, 1985, as described in Section 2.4. In late 1985, the WWTP was taken over by Wood River, which obtained a separate NPDES permit (IL0031852) for discharge of treated wastewater through the same outfall. The permit IL0000035 was originally also issued for an outfall from the wastewater lagoons on the Riverfront property, and thus, this permit remained active after the WWTP was donated to Wood River. The Wood River WWTP continued to experience problems in meeting its discharge requirements, due to inadequate pretreatment by APAC, and as a result, a Compliance Survey Letter was sent to APAC on November 2, 1989 (IEPA, 1989). In 1990 and 1991, APAC constructed an extensive pretreatment system within its plant located on the Refinery property. Since that time, the Wood River WWTP has not encountered any problems meeting discharge requirements.

The facility has never had any underground storage tanks (UST).

On May 15, 1981, Amoco Oil Company filed an EPA Notification of Hazardous Waste Site form required under Section 103(c) of CERCLA (Amoco, 1981). This form specified the Tank Bottom Disposal Areas (SWMU 2), in which leaded tank bottoms (D008) from Tanks 287 through 289 were buried prior to 1981. On March 4, 1985, IEPA completed EPA Form 2070-12, indicating that the areas used for disposal should be investigated (IEPA, 1985b). On March 4, 1986, E&E conducted a FIT Site Inspection at the facility. This study did not involve sampling, but it was

concluded the "the potential exists for the surrounding population to be adversely affected by contamination of the ground water supply." At the time of the inspection, a decision was made by EPA not to score the site using the Hazard Ranking System (E&E, 1986). No further information was available on this area.

2.6 ENVIRONMENTAL SETTING

This section describes the climate; flood plain and surface water; geology and soils; and ground water in the vicinity of the facility.

2.6.1 Climate

The climate in Madison County is continental, with cold winters, hot summers, and frequent short period fluctuations in temperature, humidity, cloudiness, and wind direction. The average daily temperature is 54.7 degrees Fahrenheit (°F). The lowest average daily temperature is 27.7°F in January. The highest average daily temperature is 78.7°F in July (Wood River, 1992).

The total annual precipitation for the county is 36.32 inches. The mean annual lake evaporation for the area is about 35.5 inches (USDC, 1968). The 1-year, 24-hour maximum rainfall is about 2.9 inches (USDC, 1963).

The prevailing wind is from the south at an average speed of 9.6 miles per hour (Wood River, 1992). No information was available on maximum wind speeds.

2.6.2 Flood Plain and Surface Water

The Amoco facility is located outside the 100-year and 500-year flood plains, in an area of minimal flooding (FEMA, 1979).

The nearest surface water body, the Mississippi River, is located 0.4 mile west-southwest of the facility and is used for recreational and industrial purposes. This surface water body ultimately discharges to the Gulf of Mexico. Other surface water bodies in the area include the Cahokia

Diversion Channel, approximately 3 miles south of the facility, and the East Fork of Wood River, 2.5 miles to the north.

Surface water runoff at the facility is directed via storm drains into the Wastewater Treatment Unit (SWMU 1), and ultimately into the Mississippi River through the NPDES outfall.

2.6.3 Geology and Soils

The facility is underlain by soils of the Tice-Urban land complex. This unit consists of 50 to 60 percent Tice soil and 40 to 50 percent Urban land; both elements are intricately mixed. Tice soil has a surface layer of very dark grayish brown, firm silt loam about 11 inches thick. The subsoil is about 45 inches thick; the upper part is dark grayish brown and brown, mottled, firm silty clay loam, while the lower part consists of grayish brown, more friable silt loam. The Urban land areas are covered by buildings and pavement such that the original nature of the soil has been obscured by cutting, filling, and grading. Surface runoff is slow in areas of Tice soil, although in built-up areas, surface drainage is accelerated by paved areas and storm sewer systems. Available water capacity is high (0.15 to 0.2 inch of water per inch of soil) and organic matter content is moderate (USDA, 1986).

Site-specific geologic information was available for the facility, and is presented here. The Amoco facility is located in an area of the Mississippi River flood plain valley known as the American Bottoms. The unconsolidated deposits, or drift, within this area are designated as "valley fill," and include both recent alluvium and glacial material. The uppermost unit consists of approximately 20 feet of flood plain deposits, a series of interbedded silt and clay deposits. Beneath the flood plain deposits, a fine-grained silty sand deposit exists with a thickness of about 20 feet; this is underlain by a coarse sand and gravel unit which is about 60 feet thick. The deepest drift unit is known as Basal Clay, and extends to the bedrock surface, which lies at a depth of between 130 and 150 feet below grade (Amoco, 1992).

The uppermost bedrock underlying the facility is of Mississippian age, and consists of interbedded shales, sandstones, and limestones of the Chester Series. These deposits are approximately 250 feet thick and are underlain by the Valmeyer and Kinderhook Series, also of

Mississippian age. These series consist of limestones, dolomites, and shales, and are approximately 900 feet thick. Devonian and Silurian limestones and dolomites totaling about 625 feet in thickness underlie the Mississippian rocks. Ordovician shales, sandstones, and dolomites extend down an additional 1,375 feet, and are underlain by Cambrian rocks of undetermined nature. The Precambrian crystalline basement lies at a depth of about 5,000 feet (Selkregg, et al., 1957).

2.6.4 Ground Water

The uppermost aquifer beneath the facility is known as the American Bottoms Aquifer, and is found in the coarse-grained outwash deposits. The aquifer extends from the water table, located at a depth of about 35 feet below grade, down to the bedrock surface. Water-yielding units within the aquifer include the fine sand and coarse sand and gravel sediments. The overlying flood plain deposits and the underlying Basal Clay do not readily yield water. Some perched water may be present intermittently within the flood plain deposits; the distribution of such water is a function of proximity to surface water bodies and amount of precipitation. Hydraulic conductivity values vary from 13 feet per day in the fine sand to 355 feet per day in the coarse sand and gravel. The horizontal hydraulic gradient ranges from 0.001 to 0.005 (no units), and ground water flow direction is to the south-southwest. However, ground water flow directions have been altered locally by drawdown from the recovery wells on the Riverfront and Refinery properties (Amoco, 1992).

Bedrock aquifers are secondary in importance to the unconsolidated deposit aquifers, as the latter provide high yields, especially in close proximity to the Mississippi Valley. The Chester Series sandstones may provide some water, but the underlying Valmeyer Series is a more dependable aquifer for small to medium supplies. The St. Louis Limestone of the Valmeyer Series is an especially favorable source of water. The Lower Mississippian Kinderhook Series and the underlying Devonian, Silurian, Ordovician, and Cambrian rocks are not utilized for ground water (Selkregg, et al., 1957).

Some contamination of the American Bottoms Aquifer has been identified on the Refinery property. The contaminants are petroleum products associated with operations at the former Amoco Oil Company Refinery and other surrounding refineries. A ground water recovery system has been installed on the Refinery property, and remediation activities are being performed and overseen under EPA ID No. ILD 980 700 967 (issued for the Refinery property).

2.7 RECEPTORS

The Amoco facility occupies approximately 18 acres in a mixed-use industrial, residential, and commercial area in Wood River, Illinois. Wood River has a population of 11,490. The facility is bordered on the north by Evans Avenue and a residential area, on the west by State Aid Road (State Route 3) and the Amoco Oil Company Riverfront Property, on the south by the sanitary sewage treatment equipment associated with the Wood River WWTP, and on the east by Conrail railroad tracks and the former Amoco Oil Company Refinery property. The nearest residences are 50 to 100 feet from the property line at the northwest and southwest corners of the facility. The nearest school, Lincoln School, is located about 0.7 mile north of the facility. The facility is entirely enclosed by a fence, and the gates are locked after business hours.

The nearest surface water body, the Mississippi River, is located 0.4 mile west-southwest of the facility and is used for recreational and industrial purposes. Other surface water bodies in the area include the Cahokia Diversion Channel, approximately 3 miles south of the facility, and the East Fork of Wood River, 2.5 miles to the north.

Ground water is used as a municipal water supply. The nearest drinking water wells are located 2.4 miles north-northwest of the facility. These five municipal wells are completed in glacial deposits at depths of between 80 and 100 feet (WRDPW, 1992). These wells are located upgradient of the facility. The location of the nearest industrial water well is not known.

Sensitive environments are not located on site. However, wetland areas are located immediately west of the facility, between State Route 3 and the Mississippi River. These areas extend northwest and south of the facility, along a strip of land adjacent to both the Mississippi and Wood Rivers. Wetland types include the following: palustrine, unconsolidated bottom, intermittently exposed, excavated; palustrine, forested, broad-leaved deciduous, temporarily flooded, excavated; palustrine emergent, seasonally or temporarily flooded, excavated; and lacustrine, limnetic, unconsolidated bottom, artificially or permanently flooded, excavated or diked. Some wetland areas may be as large as 30 to 40 acres (USDI, 1988).

3.0 SOLID WASTE MANAGEMENT UNITS

This section describes the two SWMUs identified during the PA/VSI. The following information is presented for each SWMU: description of the unit, dates of operation, wastes managed, release controls, history of documented releases, and RAI's observations. Figure 2 shows the SWMU locations.

SWMU 1 — **Wastewater Treatment Unit**

Unit Description:

The Wastewater Treatment Unit encompasses all equipment used to treat industrial wastewater, stormwater runoff, and contaminated ground water at the facility. In the past, this unit treated wastewater from the Refinery property; currently it treats wastewater from APAC operations, as well as stormwater runoff and contaminated ground water from the Refinery and Riverfront properties.

The treatment process has remained essentially the same since the unit began operation. Wastewater is initially received from off site by a concrete lift station. From there, it is pumped into a 1.27-million-gallon steel clariflotation tank (Photographs No. 1 and 2), where settling of solids occurs and a cationic polymer is injected to aid flocculation. Prior to 1984, a DAF system was used in this tank, causing solids to rise to the surface. These solids were skimmed into Tank T-202, a 38,000-gallon steel AST (Photograph No. 3); clariflotation sludge is still pumped into Tank T-202 prior to dewatering. When Tank T-202 is full, the sludge is pumped to Tank T-1001, a 15,000-gallon fiberglass AST located inside a building adjacent to the belt filter presses (Photograph No. 4). From Tank T-1001, the sludge is introduced into a feedline, where a cationic polymer is mixed with the sludge to aid dewatering. The feedline pumps the sludge to the top of the belt filter press (Photograph No. 5). Some dewatering is achieved by gravity, and the sludge is also

compressed between a series of belts. The dewatered sludge drops into a polyethylene-lined, 12-cubic-yard steel roll-off box (Photograph No. 6). There are two identical belt filter press units; during periods of high demand, both may be utilized, but one press is usually sufficient for normal sludge production levels.

The effluent from the clariflotation tank is pumped through a feedline into the equalization tank (Photograph No. 7). Within the line, sulfuric acid is added for neutralization purposes. The commercial product sulfuric acid is stored in an 8,000-gallon steel AST adjacent to the piping, and fed into a 500-gallon steel "day tank" prior to injection into the pipes. These tanks are surrounded by a concrete berm and underlain by a concrete pad. Once neutralized, the effluent is introduced into the 2.8-million-gallon steel equalization tank, which is used to smooth any high organic loadings in the wastewater by sufficiently diluting the wastewater. This tank is a former gasoline storage tank, Tank 287, underlain by bare soil and gravel, and located within a gravel bermed area.

After equalization, the water is pumped from the base of the tank into a mixing station (Photograph No. 8), where wastewater from the municipal sanitary wastewater treatment system is introduced. (This municipal waste has already undergone off-site primary clarification). Flow rate is measured using a parshall flume, and the mixture is pumped into the aeration tank (Photograph No. 9). At this point, ground water recovered from Amoco Oil Company's ongoing remediation project on the Refinery and Riverfront properties is also introduced. The aeration tank has a capacity of 3.4 million gallons and is constructed of steel. Organic matter is removed using aerobic digestion, which generates an activated sludge. The wastewater is pumped from the aeration tank into the secondary clarifier (Photograph No. 10), a 1.33-million-gallon steel tank where the sludge

settles out and is returned to the aeration tank. If organic loads are exceptionally high, a flocculent may also be used in the secondary clarifier. Between 1 and 2 tons of the so-called aerobic digestion sludge are removed from the clarifier each day to maintain the effectiveness of the system. This sludge is pumped into the aerobic digester tank for further organic digestion and settling of solids (Photograph No. 11). When a sufficient time period has elapsed (about 40 hours), the sludge is released and flows by gravity to a sludge lagoon located off the facility property, to the south (see Section 2.2). Effluent from the digester is pumped back to the aeration tank. The effluent from the secondary clarifier may be filtered using a post filter, which uses sand as the filtering media; however, this filter is not usually needed, as sufficient effluent quality is already attained. The last stage prior to discharge is chlorination, which takes place in a 32-foot by 64-foot concrete basin with a water depth of 5.8 feet (Photograph No. 12). The treated wastewater then flows through a parshall flume, and is discharged to the Mississippi River under an NPDES permit.

The unit is located outdoors, with the exception of the belt filter presses, associated roll-off boxes, and Tank T-1001, which are located indoors on a concrete floor. The outdoor tanks are situated on gravel. The entire area occupied by the unit drains to the main lift station and thus back into the treatment system. The unit treats approximately 2.7 million gallons per day (mgd) of wastewater from APAC, about 1.4 mgd of municipal sanitary wastewater, and approximately 100,000 gallons per day of recovered ground water.

Date of Startup: This unit began operation in 1977.

Date of Closure: This unit is active. It underwent RCRA closure in 1984.

Wastes Managed:	This unit manages nonhazardous wastewater, including industrial wastewaters from APAC and pretreated municipal sanitary sewage, which is treated in the final stages of the unit. Nonhazardous ground water contaminated with petroleum product pumped from the recovery system on the Refinery and Riverfront properties is also managed. In addition, stormwater runoff from the facility, Refinery, and Riverfront properties is directed through this unit. DAF float (K048 before 1981 and nonhazardous from 1981 to 1984), nonhazardous clariflotation sludge, and nonhazardous aerobic digestion sludge are or were generated during the course of the treatment process; these wastes are pumped off site to a lagoon or transported off site for landfilling.
Release Controls:	The belt filter press, roll-off boxes, and Tank T-1001 are located indoors, on a concrete floor. The equalization tank (Tank 287) has an 8-foot-high gravel berm surrounding it. The sulfuric acid tanks have concrete secondary containment. The entire area drains to the main lift station for reintroduction into the system.
History of Documented Releases:	In 1984, the mudwell, which is now the chlorination basin, overflowed due to a filter malfunction. In addition, several incidents occurred during 1984 in which the aerobic digester and post filter tanks overflowed. The water spilled into various excavations on site and was pumped out and reintroduced into the wastewater treatment unit. According to facility representatives, no hazardous constituents were present in the spilled wastewater. In 1985, approximately 100 gallons of oil were released to the Mississippi River, after a slug of oil was sent through the plant from APAC. The spill was remediated by the Coast Guard and Amoco Oil Company. In addition, a number of violations of the facility's NPDES permit occurred between 1980 to 1989. These problems were resolved in 1990 with the installation of

	additional pretreatment equipment at the APAC facility. These spills are discussed in detail in Section 2.4.
Observations:	All tanks and surrounding areas were observed to be well maintained, with no evidence of a significant release. Some minor staining was observed on the floor of the belt filter press building; floor drains in the building drain to the main lift station and back into the treatment unit.
SWMU 2	**Tank Bottom Disposal Areas**
Unit Description:	This unit consists of three areas adjacent to Tanks 287, 288, and 289, which were used for disposal of leaded tank bottoms. This waste was generated from cleanout of the tanks during the period 1952 to 1981, when they were used for storage of commercial product leaded gasoline. The exact dimensions of the areas used for disposal are not known. Each tank is surrounded by an 8-foot-high berm and is floored with gravel (Photographs No. 13 and 14). Analysis of the disposal areas in 1984 revealed levels of up to 2,660 ppm of lead in soil. No remedial action has taken place thus far.
Date of Startup:	This unit began operation in 1952.
Date of Closure:	This unit is active for storage of the tank bottoms, but no wastes have been placed in it since at least 1981.
Wastes Managed:	This unit manages tank bottoms (D008).
Release Controls:	The disposal areas are surrounded by earthen and gravel berms.
History of Documented Releases:	No releases from this unit have been documented.

Observations:	No evidence of disposal activities was seen in the area during the VSI; RAI observed no evidence of release.

4.0 AREAS OF CONCERN

RAI identified no AOCs during the PA/VSI.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The PA/VSI identified two SWMUs and no AOCs at the Amoco facility. Background information on the facility's location; operations; waste generation and management; history of documented releases; regulatory history; environmental setting; and receptors is presented in Section 2.0. SWMU-specific information, such as the unit's description, dates of operation, wastes managed, release controls, history of documented releases, and observed condition, is presented in Section 3.0. Following are RAI's conclusions and recommendations for each SWMU. Table 3, at the end of this section, summarizes the SWMUs at the facility and the recommended further actions.

SWMU 1 **Wastewater Treatment Unit**

Conclusions: This unit consists of a system used to treat wastewater from APAC, municipal sanitary wastewater, and ground water recovered during remediation on the former Refinery and Riverfront properties. The potential for release to environmental media is summarized below.

Ground Water and Air: The potential for release is low. Wastes are managed in tanks which do not show any sign of corrosion or leakage, and the unit does not manage volatile wastes.

Surface Water: A release to surface water occurred in 1985, when oil was discharged to the Mississippi River via the facility's NPDES outfall. In addition, a number of NPDES permit violations were recorded over a period of several years. These discharge problems were resolved with the installation of additional pretreatment equipment to improve the quality of the wastewater received from APAC.

On-Site Soils: Several releases to soil occurred during 1984 as a result of overflows from the aerobic digester and the mudwell (now the chlorination basin). Based on interviews with facility representatives and the file review, it appears that no hazardous constituents were involved and no soil was excavated.

Recommendations: RAI recommends no further action for this SWMU at this time.

SWMU 2 **Tank Bottom Disposal Areas**

Conclusions: This unit consists of three areas adjacent to Tanks 287, 288, and 289 used for the disposal (burial) of tank bottoms containing lead. The potential for release to environmental media is summarized below.

Ground Water: The potential for release is moderate, as ground water is encountered at a depth of at least 35 feet beneath ground surface, and the main contaminant, lead, could migrate.

Surface Water: The potential for release is low, as the area drains back into the Wastewater Treatment Unit (SWMU 1).

Air: The potential for release is low, as the unit does not manage volatile substances.

On-Site Soils: A release to soil has occurred. Soil sampling conducted by Amoco Oil Company in the area showed levels of up to 2,660 ppm of lead.

Recommendations: As this SWMU was used as a land-based disposal unit for hazardous wastes, RAI recommends that the unit undergo RCRA closure, including soil sampling for lead.

TABLE 3

SWMU SUMMARY

SWMU	Dates of Operation	Evidence of Release	Recommended Further Action
1. Wastewater Treatment Unit	1977 to present	Several documented releases in 1984 and 1985; no hazardous constituents were involved. Minor stains adjacent to belt filter press.	No further action is recommended.
2. Tank Bottom Disposal Areas	1952 to present (no wastes disposed of since 1981).	Soil sampling in 1984 revealed levels of up to 2,660 ppm of lead.	The unit should undergo RCRA closure, including soil sampling for lead.

REFERENCES

Amoco Oil Company (Amoco), 1980a. Notification of Hazardous Waste Activity form, July 25.

Amoco, 1980b. RCRA Part A permit application, November 18.

Amoco, 1981. Notification of Hazardous Waste Site, May 15.

Amoco, 1984a. Closure plan letter to Larry Eastep of the Illinois Environmental Protection Agency (IEPA), February 28.

Amoco, 1984b. Revised RCRA Part A permit application, September 5.

Amoco, 1992. Wood River Main Plant (ILD 980 700 967) Part B Post-Closure Permit Application, April 1.

Amoco Petroleum Additives Company (APAC), 1983. Letter to Kenneth Mensing, IEPA, from Henry A. McCandless addressing violations outlined in December 5, 1983 IEPA letter, December 21.

APAC, 1984. Letter to Compliance Assurance Section, IEPA from Henry A. McCandless, December 31.

City of Wood River (Wood River), 1992. Telephone conversation between Alan Supple, RAI and a Wood River employee, November 4.

Ecology and Environment, Inc. (E&E), 1986. Field Inspection Team: Inspection Report for Amoco Oil Company Main Office-WWTP, March 26.

Federal Emergency Management Agency (FEMA), 1979. National Flood Insurance Program; Flood Insurance Rate Map: City of Wood River Illinois. Community-panel number 170451 0005 B; revised May 1.

Illinois Environmental Protection Agency (IEPA), 1983. Letter to APAC and Amoco from Kenneth Mensing, outlining violations observed during a September 22, 1983 IEPA inspection, December 5.

IEPA, 1984a. Letter to J.G. Huddle of Amoco from Lawrence W. Eastep, March 23.

IEPA, 1984b. Letter to J.G. Huddle of Amoco from Lawrence W. Eastep, approving closure plan, June 15.

IEPA, 1984c. Memorandum to Division of Water Pollution Control (DWPC) Field Operations and Records Unit from Chris Port, October 10.

IEPA, 1984d. Memorandum to DWPC, Field Operations Section and Records Unit from Chris Port, December 3.

IEPA, 1984e. Compliance Inquiry Letter, December 14.

IEPA, 1985a. Memorandum to DWPC, Field Operations Section and Records Unit from Chris Port, February 5.

IEPA, 1985b. EPA Form 2070-12: Potential Hazardous Waste Site Preliminary Assessment, March 4.

IEPA, 1985c. RCRA Inspection Report - Interim Status Standards, March 6.

IEPA, 1985d. Letter to J.G. Huddle of Amoco from Lawrence W. Eastep, approving closure activities, March 20.

IEPA, 1989. Compliance Survey Letter to APAC, November 2.

Selkregg, L.F., W.A. Pryor, and J.P. Kempton, 1957. Groundwater Geology in South-Central Illinois. Illinois State Geological Survey Circular 225, Urbana, Illinois.

U.S. Department of Agriculture (USDA), 1986. Soil Survey of Madison County, Illinois. U.S. Government Printing Office, Washington, D.C.

U.S. Department of Commerce (USDC), 1963. Rainfall Frequency Atlas of the United States. Technical Paper No. 40, U.S. Government Printing Office, Washington, D.C.

USDC, 1968. Climatic Atlas of the United States. U.S. Government Printing Office, Washington, D.C.

U.S. Department of the Interior (USDI), 1988. National Wetland Inventory Maps: Wood River, Columbia Bottom, Alton, and Bethalto Quadrangles, Illinois and Missouri.

U.S. Geological Survey (USGS), 1955. 7.5-minute topographic series: Wood River Quadrangle, Illinois and Missouri.

Wood River Department of Public Works (WRDPW), 1992. Telephone conversation between Alan Supple, RAI, and Tim Palermo, Director, WRDPW, November 12.

ATTACHMENT A

EPA PRELIMINARY ASSESSMENT FORM 2070-12

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	ILD 006 272 629

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Amoco Oil Company-Main Office and Wastewater Treatment Plant	400 South Main Street				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Wood River	IL	62095	Madison		

09 COORDINATES: LATITUDE 38° 51′ 13″.N | LONGITUDE 090° 06′ 06″.W

10 DIRECTIONS TO SITE *(Starting from nearest public road)*

The facility is located on the east side of State Route 3, approximately 2.5 miles south of the intersection of Routes 3 and 143.

III. RESPONSIBLE PARTIES

01 OWNER *(If known)*	02 STREET *(Business, mailing residential)*		
City of Wood River (see Part 3 comments for additional owners)	501 W. Ferguson		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Wood River	IL	62095	(618) 251-3122
07 OPERATOR *(If known and different from owner)*	**08 STREET** *(Business, mailing, residential)*		
Metcalf and Eddy Services, Inc.	P.O. Box 343		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
Wood River	IL	62095	(618) 254-4074

13 TYPE OF OWNERSHIP *(Check one)*

☒ A. PRIVATE ☐ B. FEDERAL: _____ *(Agency name)* ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER _____ *(Specify)* ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE *(Check all that apply)*

☒ A. RCRA 3010 DATE RECEIVED: 08 / 12 / 80 (MONTH DAY YEAR) ☒ B. UNCONTROLLED WASTE SITE *(CERCLA 103 c)* DATE RECEIVED: 06 / 08 / 81 (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES DATE 09 / 30 / 92
☐ NO

BY *(Check all that apply)*

☐ A. EPA ☒ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: _____ *(Specify)*

CONTRACTOR NAME(S): Resource Applications, Inc.

02 SITE STATUS *(Check one)*

☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION

1908 (BEGINNING YEAR) | Present (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

Nonhazardous clarifletation sludge, nonhazardous aerobic digestion sludge, tank bottoms containing lead, unleaded gasoline, and commercial product oils.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Leaded tank bottoms were buried in the Tank Bottom Disposal Areas (SWMU 2) prior to 1981. These were identified in the CERCLA 103(c) notification and a 1986 Field Investigation Team (FIT) inspection. No remedial action has been taken thus far.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION *(Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents.)*

☐ A. HIGH *(Inspection required promptly)* ☒ B. MEDIUM *(Inspection required)* ☐ C. LOW *(Inspect on time-available basis)* ☐ D. NONE *(No further action needed; complete current disposition form)*

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF *(Agency/Organization)*			03 TELEPHONE NUMBER
Kevin Pierard	EPA Region V			(312) 886-4448
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Alan L. Supple		Resource Applications, Inc.	(312) 332-2230	09 / 30 / 92 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IL	ILD 006 272 629

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ■ C. SLUDGE
- ☐ D. OTHER _____ *(Specify)*
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TON _____

CUBIC YARDS Unknown

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ■ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ■ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	Unknown		Leaded tank bottoms, clarifiotation sludge
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
	Lead		Burial on site		

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

IEPA RCRA Compliance files.
EPA Region 5 files.
Visual Site Inspection, September 30, 1992.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
IL	ILD 006 272 629

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION | 02 ☐ OBSERVED (DATE: _____) | ☒ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _ | 04 NARRATIVE DESCRIPTION

There is a low potential for release to ground water. The uppermost aquifer is at a depth of about 35 feet, and the lead in the tank bottoms is not likely to migrate to ground water.

01 ☒ B. SURFACE WATER CONTAMINATION | 02 ☒ OBSERVED (DATE: 1985) | ☐ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

Approximately 100 gallons of oil were discharged to the Mississippi River via the facility's NPDES outfall. The spill was cleaned up by Amoco Oil Company and the U.S Coast Guard.

01 ☐ C. CONTAMINATION OF AIR | 02 ☐ OBSERVED (DATE: _____) | ☐ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

There is no evidence of air contamination.

01 ☒ D. FIRE/EXPLOSIVE CONDITIONS | 02 ☐ OBSERVED (DATE: _____) | ☒ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

Large quantities of petroleum products are managed on site

01 ☐ E. DIRECT CONTACT | 02 ☐ OBSERVED (DATE: _____) | ☐ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

The facility is securely fenced.

01 ☒ F. CONTAMINATION OF SOIL | 02 ☐ OBSERVED (DATE: 1984) | ☐ POTENTIAL | ☐ ALLEGED

03 AREA POTENTIALLY AFFECTED: ___ *(Acres)* | 04 NARRATIVE DESCRIPTION

Levels of up to 2,660 parts per million of lead were found in soils adjacent to Tanks 287, 288, and 289, the areas used for burial of tank bottoms.

01 ☐ G. DRINKING WATER CONTAMINATION | 02 ☐ OBSERVED (DATE: _____) | ☐ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

None identified.

01 ☐ H. WORKER EXPOSURE/INJURY | 02 ☐ OBSERVED (DATE: _____) | ☐ POTENTIAL | ☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

None observed.

01 ☐ I. POPULATION EXPOSURE/INJURY | 02 ☐ OBSERVED (DATE: _____) | ☐ POTENTIAL | ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ | 04 NARRATIVE DESCRIPTION

There is no evidence of any population exposure/injury and potential is low because the site is securely fenced.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE: IL	02 SITE NUMBER: ILD 006 272 629

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None identified.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION (Include name(s) of species)

None identified.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION

There is no evidence of food chain contamination.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES — 02 ☒ OBSERVED (DATE: 1984-5) — ☐ POTENTIAL — ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

Several instances of overflow of the wastewater treatment tanks have been documented; modifications to the system have since solved such problems.

01 ☐ N. DAMAGE TO OFF-SITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION

No damage has been documented or observed.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPS — ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None identified.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED

04 NARRATIVE DESCRIPTION

None identified.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None identified.

III. TOTAL POPULATION POTENTIALLY AFFECTED: __

IV. COMMENTS

The facility property is currently owned and operated by three separate entities: the City of Wood River, which owns the wastewater treatment plant; Amoco Oil Company, which owns the land currently housing the on-site tank farm; and Madison County, which owns land currently occupied by the William M. BeDell Achievement and Resource Center.

V. SOURCES OF INFORMATION *(Cite specific references; e.g., state files, sample analysis, reports)*

IEPA RCRA Compliance files.
EPA Region 5 files.
Visual Site Inspection, September 30, 1992.

ATTACHMENT B

VISUAL SITE INSPECTION SUMMARY AND PHOTOGRAPHS

VISUAL SITE INSPECTION SUMMARY

Amoco Oil Company - Main Office and Wastewater Treatment Plant
400 South Main Street
Wood River, Illinois 62095
ILD 006 272 629

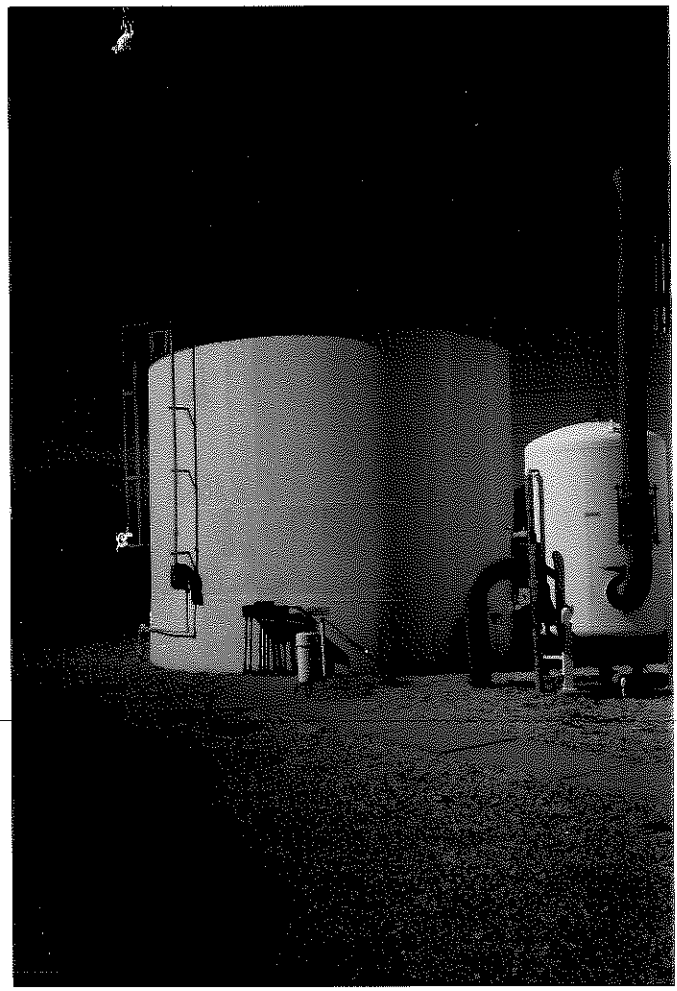
Date:	September 30, 1992
Primary Facility Representative:	Gregory S. Jevyak, Site Coordinator, Remediation Services, Amoco Oil Company
Representative Telephone No.:	(618) 254-9866
Additional Facility Representatives:	Jeff Piatt, Amoco Oil Company Kenneth E. Pape, Terminal Manager, Amoco Oil Company Bruce D. Murphy, Plant Manager, Wood River Wastewater Treatment Plant
Inspection Team:	Alan L. Supple, Resource Applications, Inc. (RAI) Catherine F. Tolley, RAI
Photographer:	Catherine F. Tolley, RAI
Weather Conditions:	Sunny, temperature about 50°F
Summary of Activities:	The visual site inspection (VSI) began at 8:45 a.m. with an introductory meeting. The inspection team explained the purpose of the VSI and the agenda for the visit. Facility representatives then discussed the facility's past and current operations, solid wastes generated, and release history. The facility is currently owned and occupied by three separate entities. The northernmost third is owned and operated by the Madison County Achievement and Resource Center, and has never been used for hazardous waste management. The central third is owned by Amoco Oil Company and is used for bulk storage of petroleum in aboveground tanks. One of the tanks, Tank 287, currently serves as the equalization tank for the wastewater treatment plant, which occupies the remainder of the property. The plant is now owned by the City of Wood River, and operated by Metcalf and Eddy Services, Inc., on behalf of the City. Facility representatives provided the inspection team with copies of requested documents.

The VSI tour began at 10:30 a.m. Tanks 287, 288, and 289 and the surrounding areas were inspected first, including the Tank Bottom Disposal Areas (SWMU 2). Tank 287 is the equalization tank for the Wastewater Treatment Unit (SWMU 1). The remainder of SWMU 1 was then viewed, including all process and storage tanks and the belt filter press and associated roll-off boxes. The facility was observed to be clean and well maintained, with no evidence of releases.

The tour concluded at 11:45 a.m., after which the inspection team held an exit meeting with facility representatives. The VSI was completed and the inspection team left the facility at 12:00 p.m.

Photograph No. 1 Location: SWMU 1
Orientation: North Date: 9/30/92
Description: This large tank is the clariflotation tank. The small tank on the left is the old DAF system.

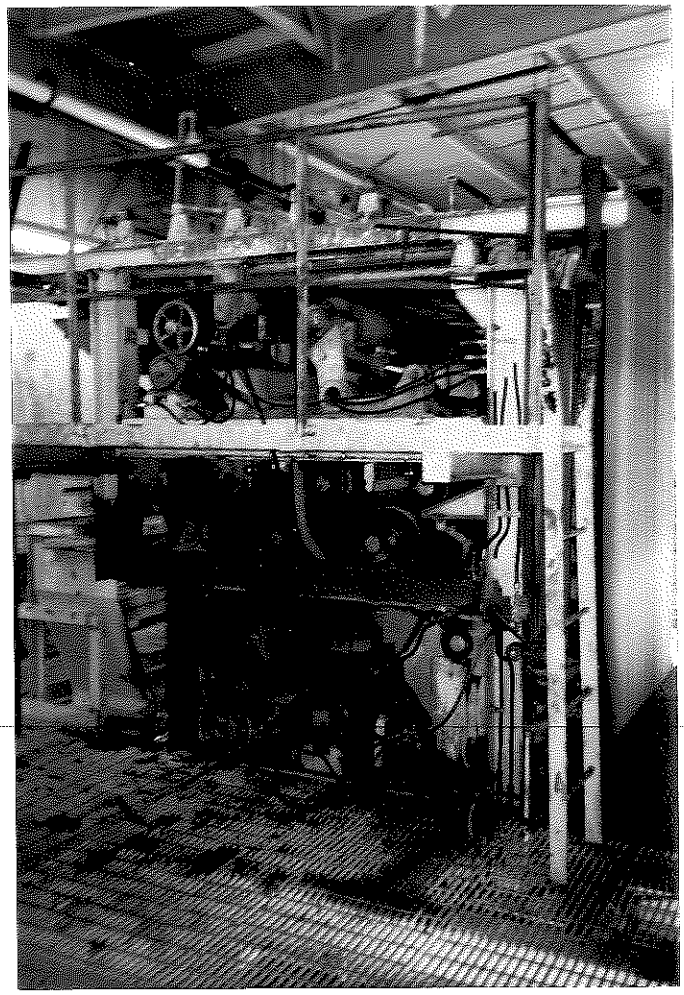
Photograph No. 2 Location: SWMU 1
Orientation: East Date: 9/30/92
Description: In the foreground is the clariflotation tank; the tank in the middle ground is the secondary clarifier.



Photograph No. 3
Orientation: West
Description: Tank T-202, used for clariflotation sludge holding.

Location: SWMU 1
Date: 9/30/92

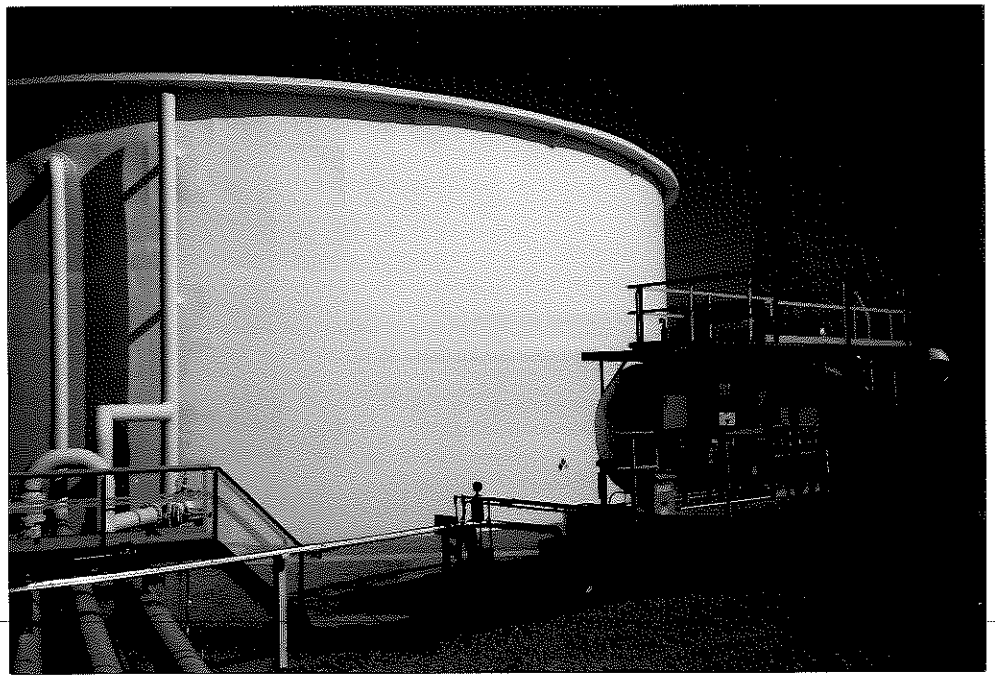
Photograph No. 4 Location: SWMU 1
Orientation: Northwest Date: 9/30/92
Description: Tank T-1001, used for holding of clariflotation sludge prior to dewatering.



Photograph No. 5
Orientation: West
Description: The belt filter press.

Location: SWMU 1
Date: 9/30/92

Photograph No. 6 Location: SWMU 1
Orientation: South Date: 9/30/92
Description: A roll-off box used to accumulate dewatered clariflotation sludge.



Photograph No. 7 Location: SWMU 1
Orientation: Northeast Date: 9/30/92
Description: The equalization tank. The small horizontal tank on the right is for sulfuric acid storage; the acid is injected into the pipes on the left for neutralization purposes.

Photograph No. 8 Location: SWMU 1
Orientation: North Date: 9/30/92
Description: At this point, pretreated municipal wastewater is mixed with industrial wastewater prior to introduction into the aeration tank.

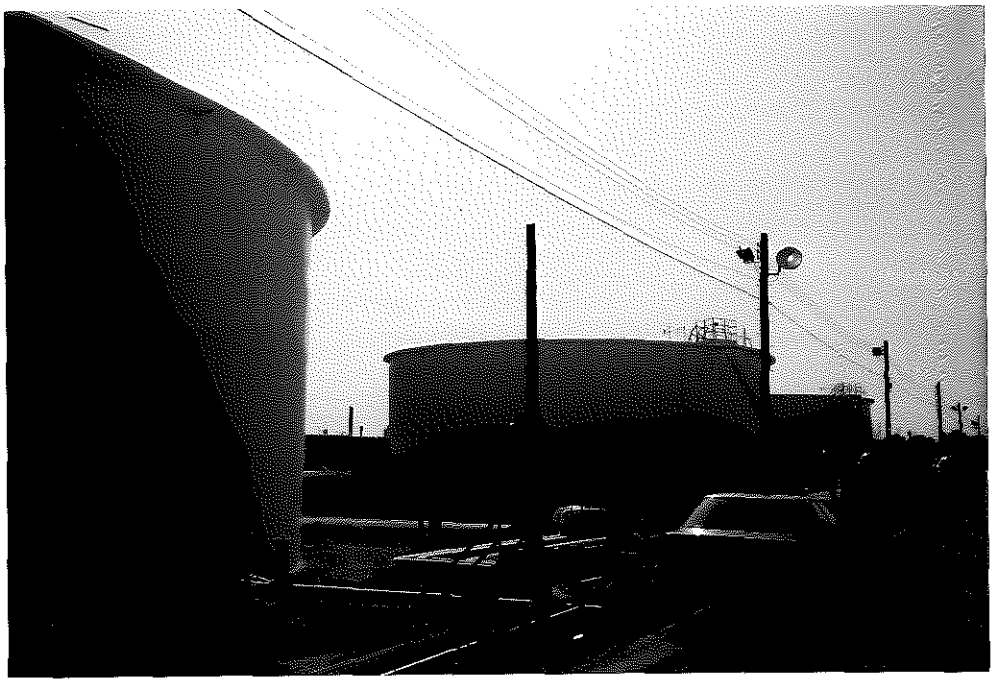
Photograph No. 9 Location: SWMU 1
Orientation: Northeast Date: 9/30/92
Description: The aeration tank.

Photograph No. 10 Location: SWMU 1
Orientation: East Date: 9/30/92
Description: The secondary clarifier; here activated sludge settles out and is returned to the aeration tank.

Photograph No. 11
Orientation: East
Description: The aerobic digester tank.

Location: SWMU 1
Date: 9/30/92

Photograph No. 12 Location: SWMU 1
Orientation: East Date: 9/30/92
Description: The chlorination basin is in the foreground; from here the treated wastewater is discharged to the NPDES outfall. In the background is the post filter, a sand filter occasionally for secondary filtering prior to chlorination.



Photograph No. 13 Location: SWMUs 1 and 2
Orientation: South Date: 9/30/92
Description: Tanks 287, 288, and 289. The two nearest tanks are used for gasoline storage, the tank in the background is the equalization tank.

Photograph No. 14 Location: SWMU 2
Orientation: North Date: 9/30/92
Description: This area adjacent to Tank 289 within the containment was used for burial of tank bottoms containing lead until 1981.

ATTACHMENT C

VISUAL SITE INSPECTION FIELD NOTES

9/30/92

8:45 a.m.
~50°F.

Amoco Oil Company Main Office (WWTP
Wood River, IL

Amoco Oil Co. property:
1977 -

Transfer of property to City of Wood River
City's municipal TF merged with Amoco's.

APAC holds IL 0000035 NPDES permit - from lagoon system

APAC has benzene stripper, oil/water sep, clariflotater (on Wood River property) - equalization, pH control.
in tank field area.

Filter units taken out of service - replumbed.

APAC's WW comes in clariflotater - Sedimentation (settling, chem. floc - cationic polymer) tank. Sludges go to belt filter press - dewatered - 12 cu.yd roll-off box. steel. - nonhazardous.
2 belt filter presses. Litchfield - Hillsboro Landfill. 1½ - 2 boxes per day. (40-50/month).
In-line pH adj - w. sulfuric acid; pumped
Effluent to equalization tank.
Eq. eff. Goes to pump station - merges with 1° municipal
Mun. 1° sedimentation - municipal flows. (Clarification).

9/30/92

Merged - pumped to aeration tank for bioxidation.

Equalization tank
Equalize out organic loadings - smooths out peaks by dilution - volume.

2° clarifier → no need to filter very often.
Effluent may be post filtering - sand filtration to meet limits - chlorinated (6 months (summer)) - discharged.

No
Also stuff comes in from Amoco Oil directly to aeration tank.
Hydrocarbon recovery at main plant - layout 17 wells - oil/water sep - water sent to POTW. 100,000 gpd.

DAF Float - was generated from air flotation unit, which is now a clariflotater.
Still generating DAF Float until 1984 - operating as a DAF unit.

Same belt press units now as when Amoco took over.

City of Wood River
Special waste permit for sludge to be landfilled - not a generator.

Permit-by-rule treating of shallow hydrocarbon recovery.

Leaded gasoline ceased in 1981. So leaded tank bottoms prior to this time.

Flocl - holding tank prior to dewatering

9/30/92

All sludge from WWTP is dewatered.

No releases since 1987. Any spills in belt press area would go into sewer-fed into front end.

Annual average - APAC 2.7 mgd - includes stormwater from whole site.
Municipal flow 1.4 mgd
GW recovery 100,000 gpd

City has NPDES permit for treatment facility. Main outfall (001) } same location.
Combined sewage outfall (001A) } same location.
Heavy rain (overflow) To Mississippi River.
Landfill disposal permit.
Land application for biosolids
Biosolids in aeration tank - further digested in the digester. Sludge storage lagoon for digested solids. Taken to farmland for reuse. April or May to October. Storage lagoon is for winter storage.
Pumped from lagoon into tank truck. WW discharged to MI

Deep GW well field - municipal. Intersection Rte 3 and 143 (Ft. Ave Rd).
Call Public Works re wells. + school.
Nearest surface water is Mississippi.
GW flow direction SSW.

Nearest residence - south of ~~sludge~~ biosolids storage lagoon.
Police shooting range on property.

GW at a depth of 25-30 feet below grade.

9/30/92

W - State Aid Rd. Rte 3 & Riverfront property
N - re Evans Ave & residences to N)
E - railroad (Conrail) & Main Plant (APAC uses)
S - residence - business.

No USTs to this knowledge
285 through 289 constructed in mid-1950s.

Storm water runoff directed into POTW. - san. sewer & storm sewer.

Skimmings from T200 Flotation tank - go to T202 - recirculated to pump station.

Talk to Shin - re. Amoco looking at report prior to.

Walk through 288 & 289 - ~~storing~~ currently empty - probably being taken out of service soon. Unleaded gasoline.
Send copy photos.
8ft high containment - gravel
On W side of tanks, tank bottoms disposed of.
Fill with gravel.
Cinders probably in containment along with tank bottoms.
67,000 barrels (42 gallons in a barrel) - 2.8 million gallons.
Carbon steel. Floating roof.
Some vegetation.

9/30/92

permits for tanks prequalization

Floating roof

In-line neutralization - sulfuric acid tank - 8-10,000 gal. 500gal day tank. Feeds into pipe - neutralized prior to discharge into 2.8 M gal tank. Pumped out at bottom - into mixing station. Hydrocarbon water pumped straight into aeration tank. 2° containment

# of employees

5-6

Security

monitoring well on site - part of ~~hydrocarbon recovery system~~ plume monitoring.
May be some localized GW plume contamination. Source not known.

10 ET employees 24/7

Clariflotater 1.2 million. Steel tank. Cationic polymer flocculant - injected ~~int~~ in solution via force main from APAC.

T 202 DAF Float storage
For small tank betw. Clariflot. & ~~th~~ T202. Is air water mix for when DAF operations took place.
Pumped to 287 - neutralized en route. Loadings equalized.
EQ basin - flow mixed w. municipal Parshal flume - measures flow sonically.
In line pH probe.

Aeration tank - adsorb organics. Microorganisms eat organic matter
3.9 million gallons.
Flows out to 2° clarifier. - settle out activated sludge -
Sometimes use flocculant with high loads. Temporary feed line -
2° clarifier - 1.3 mill. galls.
No air permit for WR WWTP.

9/30/92

Sand filter not on line right now - used post 2° clarification.
Activated sludge - pumped out of 2° clarifier. - returned to aerobic aeration tank.
Waste off certain amt. of sludge to aerobic digester - settle solids decant. Solids pumped - gravity flow to sludge lagoon.

Final chlorination - flows to outfall. Concrete basin

Sludge from clariflotater into sump - pumped to filter press
T1001 - storage tank. ~15,000. Fiberglass. Concrete floor - no evidence of release.

Cationic polymer mixed w. sludge to dewater it
Sludge pumped into BFP. Polymer injected. Pumped to top of belt. Dewaters by gravity. Then pressed between series of belts. Drops off into dumpster. Polymer injected into sludge feed line - static mixers to combine.
Polyethylene liner on dumpsters.
2 presses next to each other.

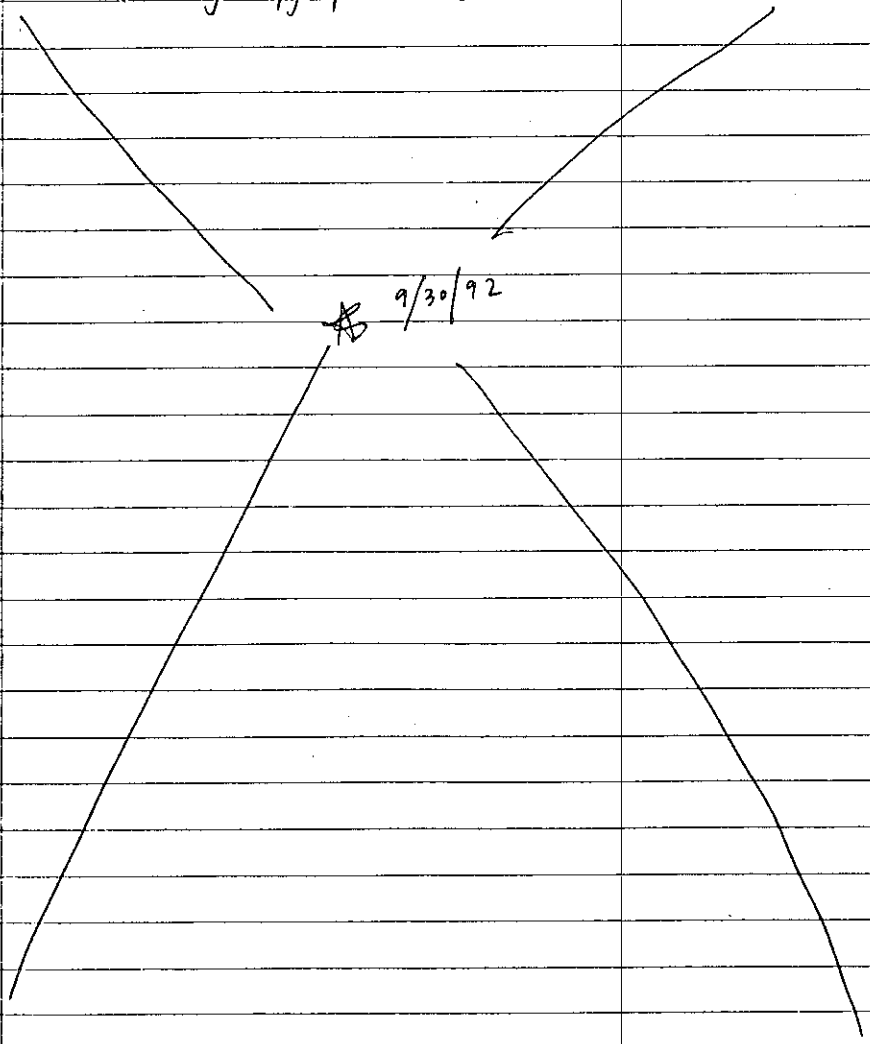
Filtrate to main pump station - back to pretreatment unit.
1,500 gal polyprop. polymer tank. Metal stand. Concrete floor.
Floor drains etc. back to pump station.

In past - prefilter post-clariflotater - not sure of exact specs.
To remove solids & O&G.

9/30/92

M & E or Wood Rice - remove biosolids - exclusive agreement w. local farmer - he gets all if he wants it. IEPA land application permit.

1,800 - 2,000 dry tons/yr of biosolids -



ATTACHMENT D

NOTIFICATION OF HAZARDOUS WASTE ACTIVITY AND RCRA PART A PERMIT APPLICATIONS

(Source: Amoco, 1980a, 1980b, 1984b)

Please print or type with ELITE type (12 characters/inch) in the unshaded areas only.

Form Approved OMB No. 158-S79016
GSA No. 0246-EPA-OT

EPA — NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave items I, II, and III below blank. If you did not receive a preprinted label, complete all items. ("Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law (Section 3010 of the Resource Conservation and Recovery Act).

INSTALLATION'S EPA I.D. NO.: ILD006272629

I. NAME OF INSTALLATION: AMOCO OIL COMPANY INC THE MD

II. INSTALLATION MAILING ADDRESS: ~~PO BOX 182~~ ~~WOOD RIVER, IL 62095~~

000507 AUG 12 80

III. LOCATION OF INSTALLATION: ~~400 S MAIN~~ ~~WOOD RIVER, IL~~ 62095

DETACH

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
F ILD006272629 1	A	8 0 0 8 1 2

I. NAME OF INSTALLATION

AMOCO OIL MAIN OFFICE AND WATER TREAT

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 3 BOX 182

CITY OR TOWN	ST.	ZIP CODE
4 WOOD RIVER	IL	62095

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 5 400 SOUTH MAIN STREET

CITY OR TOWN	ST.	ZIP CODE
6 WOOD RIVER	IL	62095

IV. INSTALLATION CONTACT

NAME AND TITLE (last, first, & job title)	PHONE NO. (area code & no.)
2 E J SULLIVAN CONSULT, ENV CNTRL	618-251-2249

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: 8 AMOCO OIL COMPANY (MARYLAND)

B. TYPE OF OWNERSHIP (enter the appropriate letter into box): F = FEDERAL, M = NON-FEDERAL — M

VI. TYPE OF HAZARDOUS WASTE ACTIVITY (enter "X" in the appropriate box(es))

- [X] A. GENERATION
- [ ] B. TRANSPORTATION (complete item VII)
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION (transporters only – enter "X" in the appropriate box(es))

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER (specify):

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your Installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION (complete item C)

C. INSTALLATION'S EPA I.D. NO.: ILD006272629

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

EPA Form 8700-12 (6-80)

AUG 12 1980

CONTINUE ON REVERSE

I.D. – FOR OFFICIAL USE ONLY

W I L D 0 6 2 7 2 6 2 9 1 2

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
F001	F003	F004	F005		
7	**8**	**9**	**10**	**11**	**12**
F012					

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
K048	K049	K051	K052		
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
P022	P053	P110	U002	U012	U013
37	**38**	**39**	**40**	**41**	**42**
U019	U044	U052	U054	U122	U133
43	**44**	**45**	**46**	**47**	**48**
U135	U140	U151	U154	U188	U210

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

- [X] 1. IGNITABLE (D001)
- [X] 2. CORROSIVE (D002)
- [ ] 3. REACTIVE (D003)
- [X] 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
F. K. Webb	F. K. Webb, Refinery Manager	July 25, 1980

AMOCO OIL MA[illegible] OFFICE AND WATER TREAT

I.D. – FOR OFFICIAL USE ONLY

W L D 0 0 6 2 7 2 6 2 9

IX. DESCRIPTION OF HAZARDOUS WASTES *(continued from front)*

A. HAZARDOUS WASTES FROM NON–SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.31 for each listed hazardous waste from non–specific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four–digit number from 40 CFR Part 261.32 for each listed hazardous waste fr specific industrial sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four–digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
U220	U226	U239			
37	38	39	40	41	42
43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four–digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterina hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. CHARACTERISTICS OF NON–LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non–listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☐ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☐ 4. TOXIC (D000)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and al attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for sub mitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE *(type or print)*	DATE SIGNED
F. K. Webb	F. K. Webb, Refinery Manager	July 25, 198

EPA Form 8700-12 (6-80) REVERSE

AUG 12 1980

396

Amoco Oil Company
200 East Randolph Drive
Post Office Box 6110-A
Chicago, Illinois 60680
Refining & Engineering Department
312-856-5450

J. F. Horner
Vice President - Refining & Engineering

November 18, 1980

Certified Mail, Return Receipt
Certification No. P26 2048550

Regional Administrator
EPA Region V
RCRA Activities
Post Office Box 7861
Chicago, Illinois 60680

Dear Sir:

Attached, please find the three Part A applications for the permits for hazardous waste management facilities associated with operation of the Amoco Oil Company refinery at Wood River, Illinois. Submission of the attached applications was delayed until today in order to afford the opportunity to obtain the maximum EPA clarification of specific requirements of the applicable regulations.

The regulations issued pursuant to RCRA, namely 40 CFR Parts 122 through 124 and Parts 260 through 265, are complex and subject to different interpretations. These interpretations may change as the U.S. EPA attempts to clarify specific requirements by issuing Regulatory Interpretive Memoranda or through amendment by rule. We were hopeful that these clarifications would be issued by EPA early enough prior to November 19 to allow for incorporation in our application, if necessary. However, this did not occur. The attached interim status permit application, Part A, constitutes a good faith effort by the Standard Oil Company (Indiana) and its Amoco Oil Company subsidiary to comply with these regulations and requirements as we understand them.

However, we reserve the right to supplement, amend, or otherwise modify, the attached interim status application should our original interpretation be found inconsistent with U.S. EPA's interpretation, or subsequent clarifications and amendments by the Agency lead to different interpretations than incorporated in our application.

Yours truly,

JFH/llh

Attachment

(fill -in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: F I L D 0 0 6 2 7 2 6 2 9

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

LABEL ITEMS

I. EPA I.D. NUMBER

III. FACILITY NAME

V. FACILITY MAILING ADDRESS

VI. FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		X	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: AMOCO OIL MAIN OFFICE AND WATER TREAT

IV. FACILITY CONTACT

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
2 E J SULLIVAN CONSULT, ENV CNTRL	6 1 8 2 5 1 2 2 4 9

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX

3 BOX 182

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 WOOD RIVER	I L	6 2 0 9 5

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER

5 4 0 0 SOUTH MAIN STREET

B. COUNTY NAME

MADISON

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE (if known)
6 WOOD RIVER	I L	6 2 0 9 5	1 1 9

NOV 1 8 1980

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST	B. SECOND
2911 (specify) PETROLEUM REFINING	2869 (specify) ADDITIVE MANUFACTURING
C. THIRD	**D. FOURTH**
NA (specify)	NA (specify)

VIII. OPERATOR INFORMATION

A. NAME

AMOCO OIL COMPANY

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

P (specify)

D. PHONE (area code & no.)

312 856 5111

E. STREET OR P.O. BOX

200 E EAST RANDOLPH DRIVE

F. CITY OR TOWN

CHICAGO

G. STATE

IL

H. ZIP CODE

60601

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES (Discharges to Surface Water): 9 N IL0000035	**D. PSD** (Air Emissions from Proposed Sources): 9 P NA
B. UIC (Underground Injection of Fluids): 9 U NA	**E. OTHER** (specify): 9 NA (specify)
C. RCRA (Hazardous Wastes): 9 NA	**E. OTHER** (specify): 9 NA (specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property bounderies. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements. F9:A/50

XII. NATURE OF BUSINESS (provide a brief description)

THE REFINING OF CRUDE PETROLEUM INTO FUEL GAS, LPG, PROPYLENE CONCENTRATE, MOTOR GASOLINES, JET FUELS, KEROSENE, DIESEL FUEL, FURNACE OIL, POLYBUTENES, RESIDUAL FUELS, INDUSTRIAL ASPHALTS, AND PAVING ASPHALTS. ALSO MANUFACTURED ARE ADDITIVES FOR LUBRICATING OILS, FUEL OILS, AND GASOLINES.
THIS FACILITY CONTAINS OFFICES, STORAGE TANKS, AND WASTEWATER TREATING FACILITIES ASSOCIATED WITH THE REFINING OF PETROLEUM IN THE REFINERY PROPER.

F9:A/51

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
F. HORNER, VICE PRESIDENT REFINING AND ENGINEERING	F. Horner	11/16/80

COMMENTS FOR OFFICIAL USE ONLY

C

(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3510-3 RCRA

EPA HAZARDOUS WASTE PERMIT APPLICATION

ENVIRONMENTAL PROTECTION AGENCY

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F I L D 0 0 6 2 7 2 6 2 9

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facili EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

* Exact Day and Month Unknown

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

C	YR.	MO.	DAY
8	52	01	01

[ ] 2. NEW FACILITY *(Complete item below*

FOR NEW FACILI PROVIDE THE DA (yr., mo., & day) O TION BEGAN OR EXPECTED TO BE

YR.	MO.	DAY
	NA	

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	
HECTARE-METER	
ACRES	
HECTARES	

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C	DUP	T/A	C
		3	1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S02	600	G	
X-2	T03	20	E	
1	S02	53,000,000	G	
2	S01	6,000,000	G	
3	T04	2,400,000	U	
4				
5				
6				
7				
8				
9				
10				

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR DESCRIBING OTHER PROCESSES *(code "T04" OR EACH PROCESS ENTERED HERE*
INCLUDE DESIGN CAPACITY.

LINE 3
T04 - BELT-PRESS DEWATERING OF DAF FLOAT

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four—digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four—digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non—listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non—listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non—listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)												FOR OFFICIAL USE ONLY											
W	J	L	D	0	0	6	2	7	2	6	2	9	3	1	W			D	U	P		3	2	D	U	P

DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	K048	40,000,000	T	S02 T04	DEWATERING
2	K048	15,000,000	T	S01	
3					
4					
5					
6					
7					
8					
9					
10					
11					
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24					
25					
26					

Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WASTE (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

F	I	L	D	0	0	6	2	7	2	6	2	9	T/A	C
													T	6

F6:A/55

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).* ~~F6:A/55~~ B

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).* F6:N/55

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)
38 51 ~~07~~ 13Ø	09Ø 06 ~~00~~ ~~60~~ Ø60

VIII. FACILITY OWNER

[X] A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no
NA	NA

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
NA	G NA	NA	NA

IX. OWNER CERTIFICATION

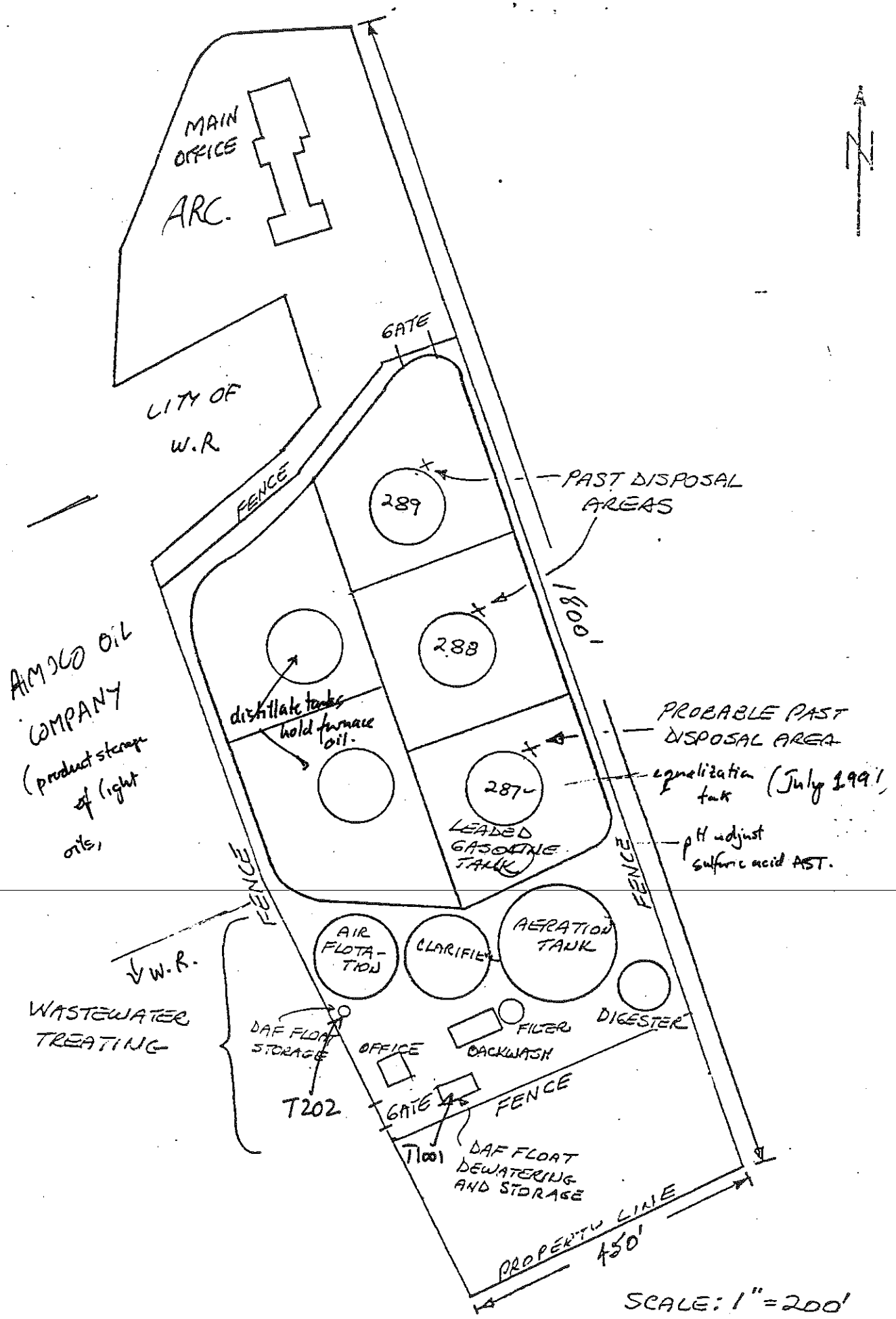
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

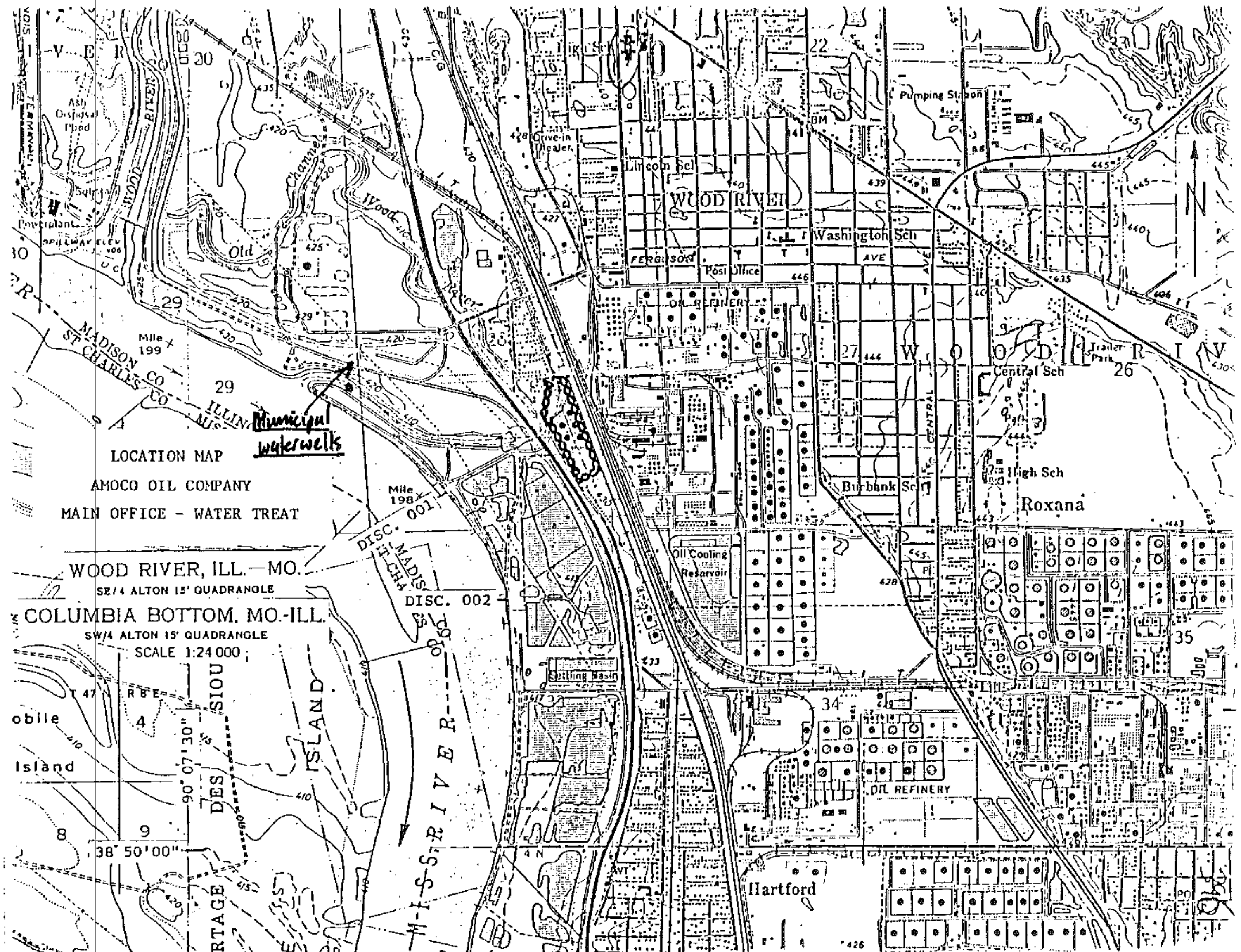
A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
J. F. HORNER, VICE PRESIDENT REFINING AND ENGINEERING	J. F. Horner	11/18/80

X. OPERATOR CERTIFICATION

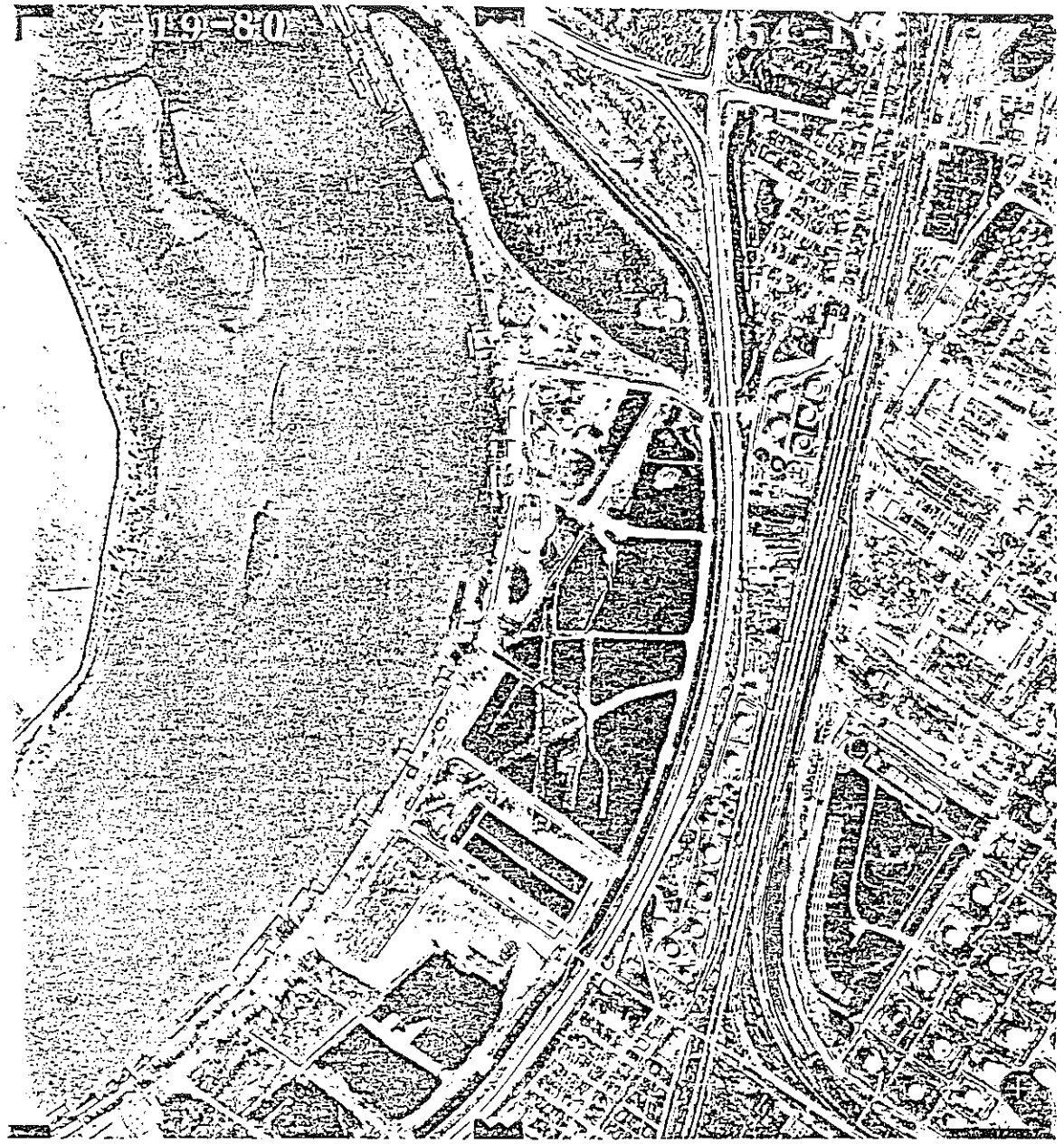
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
NA	NA	NA


MAIN OFFICE
ARC.
GATE
CITY OF W.R.
FENCE
289
PAST DISPOSAL AREAS
288
1600'
AMOCO OIL COMPANY (product storage of light oils)
distillate tanks hold furnace oil.
PROBABLE PAST DISPOSAL AREA
equalization tank (July 1991)
287
LEADED GASOLINE TANK
pH adjust sulfuric acid AST.
FENCE
FENCE
W.R.
WASTEWATER TREATING
AIR FLOTATION
CLARIFIER
AERATION TANK
DIGESTER
DAF FLOAT STORAGE
OFFICE
FILTER BACKWASH
T202
GATE
FENCE
T1001
DAF FLOAT DEWATERING AND STORAGE
PROPERTY LINE
450'
SCALE: 1" = 200'



LOCATION MAP
AMOCO OIL COMPANY
MAIN OFFICE - WATER TREAT
WOOD RIVER, ILL.—MO.
SE/4 ALTON 15' QUADRANGLE
COLUMBIA BOTTOM, MO.-ILL.
SW/4 ALTON 15' QUADRANGLE
SCALE 1:24 000
Municipal waterwells
WOOD RIVER
Roxana
Hartford
Washington Sch
Lincoln Sch
Burbank Sch
High Sch
Central Sch
Post Office
Pumping Station
Oil Cooling Reservoir
Settling Basin
OIL REFINERY
DISC. 001
DISC. 002
MISSISSIPPI RIVER
MADISON CO
ST CHARLES CO
Mile 198
Mile 199
90°07'30"
38°50'00"


1980

1980

Amoco Oil Company
200 East Randolph Drive
Post Office Box 6110-A
Chicago, Illinois 60680
Refining & Engineering Department
312-856-5450

J. F. Horner
Vice President - Refining & Engineering

ILD-006-272-629

September 5, 1984

Certified Mail P16 2199292
Return Receipt Requested

RCRA Activities
Part B Permit Application
U.S. EPA, Region V
Post Office Box A3587
Chicago, IL 60690-3587

RECEIVED

WMD-PMU
EPA, REGION V

Attention: 5HW-12 (Mr. David Dolan)

Gentlemen:

ILD 006272629 GEN, TSD, PA
ILD980 700967 GEN, TSP, TSD, PA
ILD 980 503 106 GEN, TSD, PA

Revised RCRA Part A Permit Applications

Enclosed are revised RCRA Part A permit applications for three Amoco Oil Company sites in Wood River, Illinois, reflecting a change in operator status. These sites are identified as ILD 980700967 (main plant site), ILD 006272629 (waste water plant—main office site), and ILD 980503106 (riverfront site). The sites are still owned by Amoco Oil Company, but all operations concerning hazardous wastes are being carried out by Amoco Petroleum Additives Company. The revisions to these applications were suggested by Mr. David Dolan.

In addition to the change in operator status, the Part A for the main plant site was also revised by the elimination of the boiler feedwater softener solids pits as hazardous waste treatment facilities. Illinois EPA personnel earlier suggested that we confer with Region V personnel to determine if this change would be acceptable. In a discussion with Region V personnel, it was agreed that we should make this change and describe in detail in this cover letter just what the pits were used for and their current status.

These pits are surface impoundments, roughly 200' x 100' x 10' deep. They are used to accumulate solids produced in the lime-caustic softening of boiler feedwater. The solids are delivered to the pits as a 5-10 percent slurry in water. The solids are primarily calcium carbonate and magnesium hydroxide. When one pit is filled, the discharge of solids is delivered to the second pit, while the first is allowed to dewater by drainage and evaporation. When the solids are dry, they are excavated and disposed of off-site in an industrial waste landfill.

At about the time that petroleum refining operations were terminated in Wood River in 1981, a number of barrels of off-specification anhydrous aluminum chloride was accumulated. This material was a hazardous waste because of the characteristic of reactivity; anhydrous aluminum chloride reacts violently with water. Amoco tried but was not successful in finding either a disposer or a manufacturer of aluminum chloride willing to accept the material. Since

Amoco was faced with on-site treatment of this waste, the softener solids pits were an appropriate facility for destroying the reactivity by reaction with water in the pits and for neutralizing acidic products of reaction by the alkalinity of the pit solids.

These roughly twenty barrels of aluminum chloride were treated by carefully emptying one at a time into the south softener solids pit. This type of treatment was utilized on two more occasions, but this pit has not been used for hazardous waste treatment since September, 1983. The north pit has never been used for this purpose.

The chemistry of the treatment shows that no hazardous material can remain following hydrolysis and neutralization:

$$2\ AlCl_3 + 6\ HOH \longrightarrow 2\ Al(OH)_3 + 6\ HCl$$
$$6\ HCl + 3\ CaCO_3 \longrightarrow 3\ CaCl_2 + 3\ HOH + 3\ CO_2$$

The following reaction might also occur to a minor degree:

$$2\ HCl + Mg(OH)_2 \longrightarrow MgCl_2 + 2\ HOH$$

A given weight of aluminum chloride requires approximately an equivalent weight of calcium carbonate to neutralize the hydrochloric acid produced by hydrolysis. The total amount of aluminum chloride disposed of since 1981 is in the range of four to five tons while the softener solids accumulate at the rate of 250 to 300 tons a year. From a comparison of these weights, it is obvious that adequate alkalinity has been provided to neutralize all acidity produced by hydrolysis. To substantiate the theoretical approach, a sample of the supernatant on August 6, 1984 was tested and had 9.5 pH.

A closure plan for the main plant site at Wood River was submitted to the Illinois EPA by Amoco on July 13, 1984. Closure of these softener solids pits was included in that plan and merely involved assurance that the water in the pits is not acidic or, in other words, does not possess the characteristic of corrosivity. This has been done, and we can arrange, if necessary, for certification of this fact by an independent, registered, professional engineer.

We would appreciate being apprised as soon as possible on your acceptance of the removal of the boiler feedwater softener solids pits from the RCRA Part A application for ILD 980700967.

Yours truly,

J. F. Horner
Mail Code 1204A

JGH/JFH/dak

Enclosures

L. Eastep, IEPA, w/attachment

Please print or type in the unshaded areas only
(fill—in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

I L D 0 0 6 2 7 2 6 2 9

	X			X	
X				X	
X		X		X	
	X			X	
	X			X	

A M O C O O I L M A I N O F F I C E A N D W A T E R T R E A T

S U M N E R R A

6 1 8 2 5 1 2 2 2 8

P O B O X 1 8 2

W O O D R I V E R

6 2 0 9 5

S O U T H M A I N S T R E E T

M A D I S O N

W O O D R I V E R

I L 6 2 0 9 5

1 1 9

EPA Form 3510-1 (6-80)

CONTINUE ON REVI

CONTINUED FROM THE FRONT

2869	(specify) Lube Additive Manufacturing	5171	(specify) Petroleum Terminaling
	(specify)		(specify)

AMOCO PETROLEUM ADDITIVES COMPANY

(specify) 314 854 8000

231 SOUTH BEMISTON AVENUE

CLAYTON MO 63105

ILOOOOOO35		NA	
NA		NA	(specify)
NA		NA	(specify)

Formerly petroleum refining. These operations were permanently shut down on or about June 1, 1981. Operations now consist of the manufacture of additives for lubricating oils, fuel oils, and gasolines by Amoco Petroleum Additives Company. Terminaling of gasolines and distillates is conducted by Amoco Oil's Marketing Department.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
J. F. Horner, Vice President Refining and Engineering	J. F. Horner	9/5/84

EPA Form 3510-1 (6-80) REVERSE

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA HAZARDOUS WASTE PERMIT APPLICATION

U.S. ENVIRONMENTAL PROTECTION AGENCY

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F I L D 0 0 6 2 7 2 6 2 9

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility c revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

C 8 — YR. — MO. — DAY

☐ 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILIT PROVIDE THE DAT (yr., mo., & day) OPE TION BEGAN OR IS EXPECTED TO BEG

YR. — MO. — DAY

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided fo entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, th describe the process *(including its design capacity)* in the space provided on the form *(Item III-C).*

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and t other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 2	53,000	G		7				
2	S 0 1	6,000	G		8				
3	T 0 4	2,400	H		9				
4					10				

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

LINE 3

T04--BELT-PRESS DEWATERING OF DAF FLOAT

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four-digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four-digit number(s) from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code(s) from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non-listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code(s) from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV (shown in line numbers X-1, X-2, X-3, and X-4 below) — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1)														
W	I	L	D	0	0	6	2	7	2	6	2	9		

FOR OFFICIAL USE ONLY														
W						D	U	P				2	D	U	P

DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is used, entered in D(1))
1	K048	40,000	T	S02 T04	
2	K048	15,000	T	S01	
3					
4					
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26					

Continued from the front.

IV. DESCRIPTION OF HAZARDOUS WA (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

													T/A	C
F	I	L	D	0	0	6	2	7	2	6	2	9		6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground—level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)			LONGITUDE (degrees, minutes, & seconds)		
38	51	01.3	090	06	006

VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no.)
E AMOCO OIL COMPANY	312-856-5111

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F 200 EAST RANDOLPH DRIVE	G CHICAGO	IL	60601

IX. OWNER CERTIFICATION

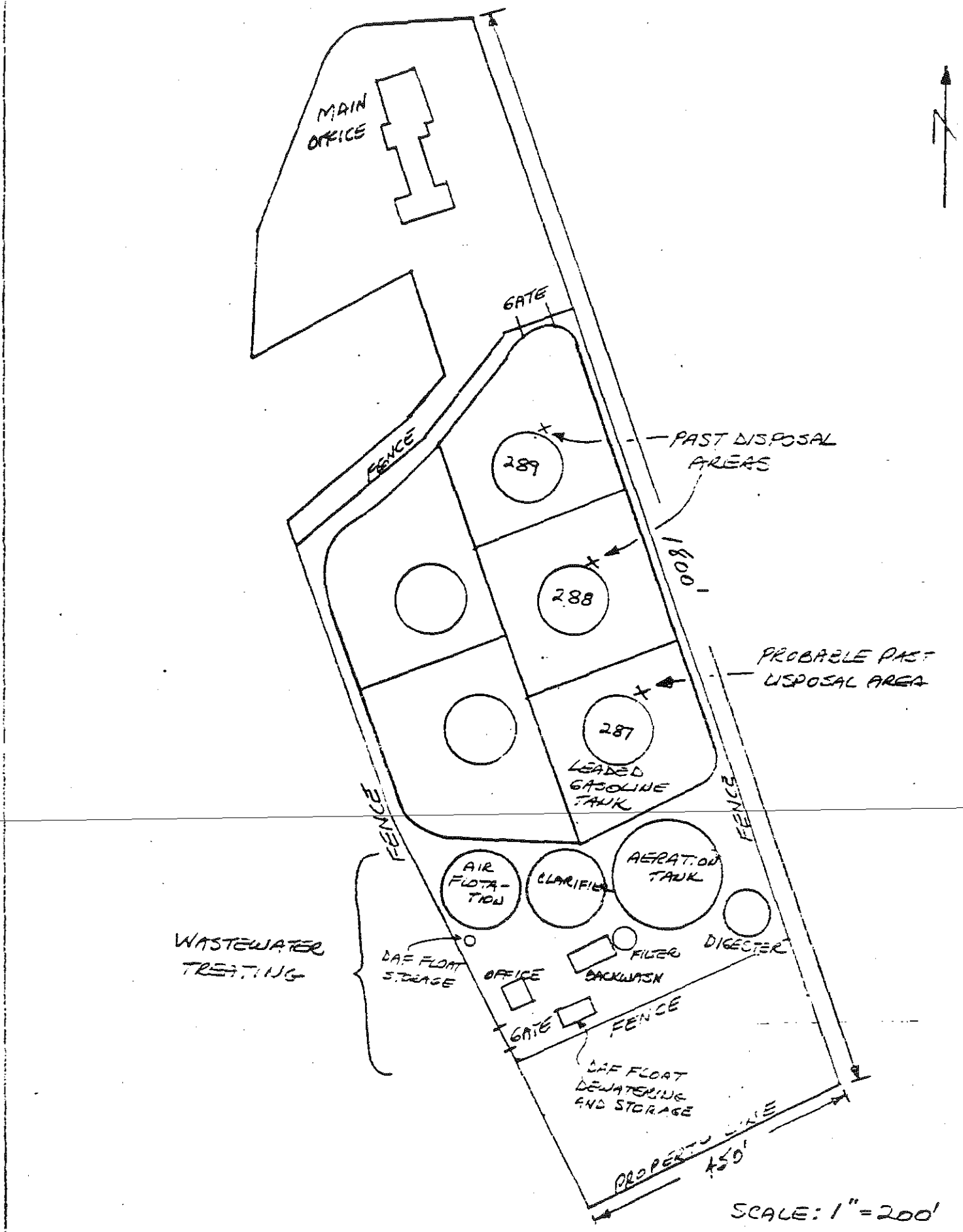
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

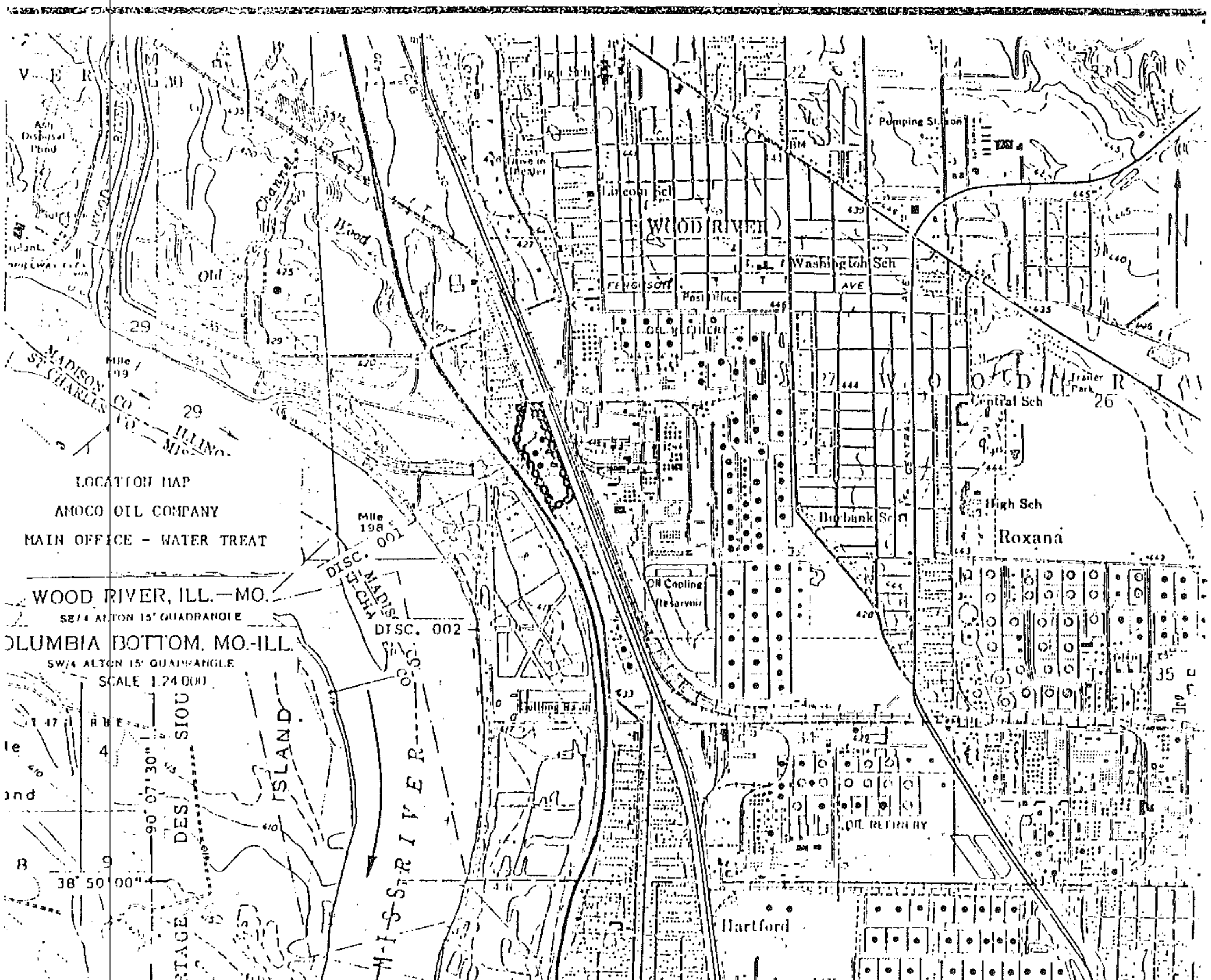
A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
J. F. Horner, Vice President Refining and Engineering	J F Horner	9/5/84

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
H. A. McCandless, Vice President Manufacturing	H A McCandless	7/L/84


MAIN OFFICE
GATE
FENCE
289
PAST DISPOSAL AREAS
1600'
288
PROBABLE PAST DISPOSAL AREA
287
LEADED GASOLINE TANK
FENCE
FENCE
AIR FLOTATION
CLARIFIER
AERATION TANK
DIGESTER
WASTEWATER TREATING
DAF FLOAT STORAGE
OFFICE
FILTER BACKWASH
GATE
FENCE
DAF FLOAT DEWATERING AND STORAGE
PROPERTY LINE
450'
SCALE: 1" = 200'


LOCATION MAP
AMOCO OIL COMPANY
MAIN OFFICE - WATER TREAT
WOOD RIVER, ILL.—MO.
SE/4 ALTON 15' QUADRANGLE
OLUMBIA BOTTOM, MO.-ILL.
SW/4 ALTON 15' QUADRANGLE
SCALE 1:24 000
WOOD RIVER
Roxana
Hartford
Washington Sch
Central Sch
High Sch
Pumping Station
Post Office
OIL REFINERY
Oil Cooling Reservoir
Ash Disposal Pond
Trailer Park
DISC. 001
DISC. 002
Mile 198
Mile 199
MADISON CO
ST CHARLES CO
ISLAND
MISSISSIPPI RIVER
38°50'00"
90°07'30"